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GLEANINGS A JOURNAL DEVOTED TO BEES, AND HONEY, AND HOME INTERESTS. **BEE CULTURE** ILLUSTRATED SEMI-MONTHLY Published by THE A. I. ROOT CO. \$1.00 PER YEAR MEDINA, OHIO

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No. 20.

STRAY STRAWS FROM DR. C. C. MILLER.

IF YOU MUST FEED, better rush it.

SOMNAMBULIST, in *Progressive*, seems to be warmly drawn toward mustard as a honey-plant. But mustard often draws warmly.

SECTIONS that are extracted, to be used another year, must be cleaned out by the bees, or your sections will be likely to contain candied honey.

AUSTRALIANS are giving attention to the question whether it may not be feasible and profitable to so manage as to increase the production of wax.

"ONCE OR TWICE, when I was not present, somebody said there was a little jangle," says A. I. Root, p. 713, which goes to show he ought to have known better than to be absent from the convention.

THAT VANILLA FLAVOR hardly came from poppies, as hinted on page 704, for I had the same-flavored honey a year or two ago, and there are no poppies here. [Can you guess what it did come from then?—Ed.]

APIS DORSATA. The editor of *Review* ears that the introduction of the big Indian bee might be like that of the English sparrow, the new bee living wild and using the nectar that our hive bees need.

HENS' EGGS were put in a colony of bees for hatching, by Mr. Schornack. In a week the eggs had started to hatch, but none ever produced chickens.—*Centralblatt*. [Why didn't you give your rotten-egg experience along the same line?—Ed.]

THE CROCK-AND-PLATE feeder is as good as the Miller feeder, except when you want to feed more than the crock will hold at one time. [Fill the crock once or twice more as the case may warrant. That's the way we do.—Ed.]

A PICTURE of alfalfa is hardly needed for those who are familiar with sweet clover. Just look for a plant with sweet-clover leaves and

purple blossoms. [That's good; but will the Western bee-keeper agree as to this similarity?—Ed.]

SEVERAL CASES of foul brood broke out at the Michigan Experiment Apiary this season, in colonies that were diseased years ago, but healthy since. Mr. Taylor thinks the dearth caused the bees this year to eat honey that was stored years ago with foul-brood germs in it.

DID YOU EVER notice how much harder it is to get bees to take feed from a feeder in spring than in the fall? It might pay to put a story of empty combs over an excluder in the fall, and feed enough to have them filled, just to have them ready for the next spring. I'm trying it.

IF THE INTEREST among bee-keepers continues in such forage-plants as crimson clover, sweet clover, alfalfa, lathyrus sylvestris, etc., the tables will be turned; and instead of agricultural journals with a bee department there will be bee-journals with an agricultural department.

SOMNAMBULIST complains in *Progressive*, in a not very sleepy way, of the Ohio law that makes sweet clover a noxious weed, to harbor which is a crime, and wants me to go as a missionary to labor with the heathen legislators of Ohio. Messrs. Boardman and Root are the men for that job.

HASTY, in *Review*, suspects that not more than half the eggs laid by a queen are hatched. I suspect, Hasty, that your suspicion is not above suspicion. [A good many things seem to point that way, that's sure. We ought to have more light on this point. Nudge experimenter Taylor's elbow.—Ed.]

A HASTY VISIT the other day to the small-fruit farm of H. R. Cotta, Freeport, Ill., made me almost wish I could give up bees and go into small fruits. I wish A. I. Root had been along to see the fine shape in which every thing was kept; \$400 an acre from Ancient Briton blackberries!

THE EDITOR of *Review* says he no longer looks to see if a young queen gets to laying all right, philosophizing thus: "Suppose a queen is lost,

the hive, combs, and honey are left, and there is a better chance in the field for the other bees." I've known cases in which neither combs nor honey was left. [My experience seems to show that it does pay every time to see whether a young queen actually turns out to be fertile and a good one. Too many queens turn up missing to make such a policy as Bro. Hutchinson indicates a safe and profitable one, in our yards at least.—Ed.]

I'M THANKFUL, very thankful, to say of my bees, that lately "a change has come over the spirit of their dreams," and they've stopped dreaming, gone to work, and are now filled up heavy for winter. Who knows but some of these years they may conclude to work again during the clover harvest?

ONE ADVANTAGE of using percolating feeders, or the crock-and-plate method, is that robbers don't trouble as they do when you use syrup. When you pour in the sugar, robbers don't care for dry sugar. When you pour in the water, it stays on top, and robbers don't hanker after cold water. [Yes, and that advantage is a big one in a beginner's case.—Ed.]

ALFALFA is the same thing as lucerne or luzerne. Formerly it was known in this country by its French name, "lucerne;" but in 1853 it was introduced into California from Chili, and has since been known by its Spanish name, "alfalfa." It is also called Chilean clover and Brazilian clover. Its botanical name is *Medicago sativa*.

F. A. LOCKHART has mailed me a cage with equal numbers of Carniolans and blacks. The one lot are nearly solid black, and compared with them the Carniolans are regular zebras, striped alternately gray and black, above and below; no trouble to distinguish them, and no trouble to describe the difference. [No, not if the other fellow has seen the difference.—Ed.]

INTRODUCING QUEENS. Here's the plan N. D. West gives in *Canadian Bee Journal*. Remove the condemned queen, and then, before closing the hive, give them a queen in West's spiral-wire queen-cage, with a piece of hard candy $1\frac{1}{2}$ inches long in the large end of the cage (use store candy). Then place the cage in the hive on the top of the frames, or between the combs, and in from 30 to 48 hours the queen will be liberated.

FOUL BROOD being discussed at a convention reported in the *Australian Bee Bulletin*, a number claimed that the introduction of Italians made it easier to prevent and cure the disease. Isn't that a new claim for the yellow favorites? [Yes. It has been urged by a few that our native blacks are much more hardy and more proof against disease; but real facts here from careful unprejudiced observers, I think, show that there is no real difference.—Ed.]



THE BEE-KEEPERS' UNION.

MUCH NEEDED AND IMPORTANT WORK FOR IT
TO DO; ADULTERATION IN CALIFORNIA;
THE TRUTH OF AN "ESTIMATE"
QUESTIONED.

By C. W. Dayton.

The amalgamation of the N. A. B. K. A. and B. K. U. might turn out like uniting two colonies of bees—in a little time the united colony is no stronger than the single one. That there is need of a more powerful organization of bee-keepers, I do not hesitate to declare. What is meant by "powerful" relates more directly to the fatness of the treasury. An exhaustless treasury and an active executive constitute just such a team as we want. The present executive force would be very hard to improve; but if bee-keepers would rally for the protection of their interests only slightly there might be \$50,000 in the treasury. I will mention some of the purposes for which such money might be used.

First, there are some counties in this State where the keeping of bees is prohibited. Such laws were made on account of the supposed harm which bees do to grapes. At that time there were thousands of acres of vineyards. A disease has since destroyed the grapevines, and the wineries are dilapidated and fallen down. But the laws against the bees still remain. Some of the worst-cut grapes I have ever seen were several miles from an apiary, and at the time of a honey-flow. There were many Mexican hornets, but no honey-bees working upon them. Last year a Los Angeles County supervisor impetuously charged all such depredations to honey-bees. He said that one hive of bees standing at the corner of a vineyard would destroy the grapes for several rods around. A bee-keeper may argue for the bees, and his arguments have no weight, simply because he keeps bees. A vineyardist may charge all the damage to the bees, because he deludedly thinks bee-keeping a lazy man's occupation. We need a union which is able to place three or five disinterested and competent men in the field, and keep them there until the facts are established; then fight the unjust laws until they are reversed. Bee-keeping is one of the useful and pure industries; but it has been stamped into the ground because it happened to come in the way of the wine industry. Next time we may be compelled to move because our bees sip at and get trapped in the emptied beer-kegs standing by the saloon. The bees ought to be ashamed of this; but here in California, water is sometimes very scarce. The wine industry is a positive injury and

nuisance, carrying debauchery and crime in its wake, while bee-keeping brings health and intelligence at every step of its progress. It is not only necessary that the facts be ascertained for bee-keepers, but they should be established by publication and circulation, so that any backwoods ignoramus like the Los Angeles supervisor can not wield a contaminating influence. The more power and execution there is in the organization, the more regard and friendship there is cultivated for the industry itself.

In many cities, especially where the corporate limits include large scopes of farming lands, it is sought to prohibit the keeping of bees. This was the case in Los Angeles, either because the city fathers wanted business to indicate that they merited their present salaries, or because the bees paid an occasional visit to the fruit-stands. I am uncertain which. But I do know there were one thousand flies to one bee; and while flies are filthy, such bees are extremely harmless and cleanly. The fear of an interference by the Bee-keepers' Union permitted the bees to remain.

Another line of occupation for such an organization is the detection and punishment of adulterators. First, there should be laws made to prohibit adulteration. The only way to get them is to put shoulders to the wheel, and push. The ground is smooth, and the axle well oiled, but the push is lacking. Just a bare willingness will almost start the wheel moving. It needs detectives to gather evidence, and lawyers to tell what evidence is. It is estimated that one-half the honey produced by California, has been adulterated with glucose, and sent east, by a few if not by a very few wholesale firms. Honest dealers refused to buy, because eastern markets have been ruined by the hand of the adulterator, and the best of honey now goes begging for 4 cents while there is only a partial crop. Thus the wealthy adulterator's coffers have been filled, and the pockets of the poor bee-keeper are now being emptied, and the eastern honey markets are stagnated to a corresponding extent.

Another imposition upon our welfare is the local retailer or grocer. He is the man who makes a living by constantly beating down all prices but his own. He tells the honey-man there is a big crop when it is very small. He tells the honey-man that his honey is of poor quality. Then when he sells it out he tells his customers how fine the quality is; docks two cents for propolis on sections, but sells it out as if there never was any such thing as propolis; pays 4 cents a pound for extracted honey, which he sells at 8 or 10, while he pays \$5.50 per 100 pounds for sugar which he sells out at 19 pounds for one dollar, or $\frac{1}{4}$ cent per pound less than the purchase price. One is a local, neighborly industry, while the other is Spreckles'

monopoly, of the Sandwich Islands. If the grocer will charge as much for selling sugar as honey, it will be eight pounds for \$1.00. This will check the consumer's greediness for that foreign monopolistic commodity in favor of what may be obtained near home. That will make honey 10 cents in place of 4.

Still another complaint I have to make is in regard to the imposition of licenses upon those who peddle their own productions, by county supervisors and town councils. At the bottom of this will doubtless be found the merchants, in the endeavor to swing the retail business into their exclusive hands. Fruit, tinware, or notions is different from honey, because they can not be, or are not liable to be, adulterated. I believe that nine-tenths of the honey adulteration of the past was the work of dealers. Not only city dealers, but several country merchants, have boasted of how they did it. With their high profits on honey, and no profits on sugar, and their adulterating tendencies, are we going to submit without a murmur to their sitting down upon our humble vocation with a license? Such a law is a step in favor of capital and monopoly, both great and small.

Florence, Cal., Sept. 10.

[I think you are quite right as to fields of work for the Union. I have, as you may know, advocated that it was high time for it to branch out, and one of these lines of work was the hiring of detectives to follow up suspected cases of adulteration, and not wait for outside sources to bring in a mountain of evidence, for such evidence will not usually come in of itself. But it seems to me the estimate is rather sweeping, that assumes that "one-half the honey produced by California has been adulterated with glucose." I don't believe it. While I do not call in question your veracity, I should like to know the source or basis upon which such estimate is made, or the person or persons making it, before I could swallow it. You see, if it is not true, or is based on insufficient data or poor authority, the mere reference to it in print, *unchallenged*, does harm. Suppose, for instance, that the newspapers all over the land pass the statement the rounds, that half of all the so-called California honey is adulterated, and then back it up by saying that California bee-keepers generally believe it, what will be the effect on consumers? If such a thing is *not* true, a fearful damage will be done to California bee-keeping interests. Now, then, GLEANINGS wishes to be enlightened on this "estimate." Let it be sifted to the bottom; and if it is true, we will, with the help of the Union, try to remove the condition that makes such a statement true.—Ed.]

CALIFORNIA ECHOES.

By Rambler.

"The pleasant occupation of tending bees," says Bro. Hutchinson, in the *Cosmopolitan*. Are we to be considered as bee-tenders, instead of bee-keepers after this?

What a fuss you benedicts make over the mere suggestion of crackers and cheese! I

should like to see your antics if you had to roll up in a blanket and sleep in the shelter of some friendly rock. Still, some very well-regulated people find health and pleasure in so doing in this country.

That was an unfair proceeding on the part of Bro. Schaeffle, in relation to smiling Betsy. He withheld a very important item. Those natives have a superstition that, if they allow their photos to be taken, they will not live long. Poor smiling Betsy, after the camera episode, went into decline, and died in about six weeks. *Vale* Betsy.

Cyprian bees are at a discount in this portion of the State. Their vindictive nature and the swarming impulse are undesirable qualities to the majority of bee-keepers. Mr. D. A. Wheeler, of Riverside, having several hundred colonies of this race, has resolved to requeen his apiaries. □ Mr. F. A. Lockhart, of Lake George, N. Y., is filling an order on this job for 300 queens, Italian and Carniolans. □ Cyprians must go.

I do not consider that McIntyre-Holly test a fair one; for a hive with loose frames, and seven inches deep, can not be considered a Heddon principle at all; and if Mr. Holley is satisfied with the test, I think an important portion of his education in relation to the Heddon hive was neglected. With a frame $5\frac{3}{4}$ deep, with proper spaces, I have found a prolific queen ready to occupy three chambers. But I will say nothing further upon this vexed question. I suppose, in spite of all I may say, these friends will persist in sticking to their jumbo barrel.

A lawyer, reared in the backwoods, as the story goes, began to rise in his profession, and his increasing circle of friends found that he used a common flour-barrel in which to store his documents, letters, etc. If a document was needed he would plunge his hand into the barrel, and seldom failed to bring forth the right paper. His well-meaning friends made him a present of a new up-to-date secretary, with an adequate supply of pigeon-holes. The documents were transferred from the barrel to the new-fangled thing; but it was not adapted to the man, and he soon returned to the use of the barrel again. It strikes me that this is the reason why Bro. B. Taylor failed with the divisible-brood-chamber hive.

On page 642, under "market gardening," the pit, or vault, under water-closets, is condemned, and justly. But here is a point that I have observed that is not mentioned. Many such pits in some of our lively towns here in California, and probably elsewhere, are subject to being flushed with water during the irrigation of land near by. A period of several weeks elapses before more water is turned in, and between times the water becomes stagnant, and a

breeding-place for millions of mosquitoes. Then people go around wondering where all the mosquitoes come from; put up screens, burn buhach, and make a great fuss. It all comes from that nasty pit; and if it must be used, the throwing in of a little chloride of lime occasionally would cure the mosquito nuisance if not the stench.

THE SIZE OF HIVES.

THE RELATIVE ADVANTAGES OF LARGE AND SMALL SIZES DISCUSSED FURTHER

By Miss Emma Wilson.

The hive question bothers me a great deal. I am like the boy who wanted to eat his cake and keep it too. I don't want to give up the eight-frame hive, it is so nice to handle, and such a comfort when hauling-time comes. And yet—and yet—I fear it is not big enough. In fact, I feel certain it is not, take it all the year round.

And now comes in the point Dr. Miller and I do not agree upon. I very much object to tiering up. Lifting off and on upper stories is too hard work. I very much prefer having all my frames in one story. He rather favors holding on to the eight-frame size, and giving extra stories when needed. I think that would be a good plan too, as our queens go readily from one story to the other, even if it were not for the great amount of hard lifting that is involved in it. Just think a minute about it. For every colony that is examined, that upper story has to be lifted off and then lifted back again, and the upper story is always the heavier one. After you have lifted off and on upper stories all day, you begin to think there is not much enjoyment in bee-keeping.

Another point in favor of one story is, I think I can find queens a little quicker with one story than with two. With two stories she has a little more chance to get out of your way.

Then the matter of wintering comes in for consideration. With the eight-frame hive there is always a little uncertainty as to whether they will have stores enough or not. In fact, you may feel pretty certain that most of the strong colonies will need feeding either fall or spring. With a larger hive there will be chance for extra frames of honey, to be used if needed, and I do believe that bees do just a little better in spring if they have an abundance of stores.

I feel very sure that we've had more swarming with the eight-frame hive than we used to have with the ten-frame hive. I don't know whether the smaller hive is entirely to blame for it or not. I don't have as much faith that plenty of room will prevent swarming as I used to have. It may help, but a good many of our colonies have made preparations for swarming with sixteen frames, and certainly no queen ought to feel badly crowded with that number.

If all our bees were kept at home, and we had

no out-apiaries, I think I should decide very quickly that I want a large hive. With a large hive you can have rousing big colonies, and they are the ones that give you the honey. If at any time you wish to contract down to eight frames, it is easily done. But, oh dear me! I just can't bear to even think of hauling the bees and lifting those great big clumsy hives again. I think that, on the whole, I shall still vote for the eight-frame hives in the out-apiaries, but will vote for a large hive at home.

Marengo, Ill.

□ [I think most bee-men who have a liking for the two hives, and would take less account of the lifting item, would vote the other way—large hives for out-apiaries and the smaller ones for the home yard. The former, being less liable to cast swarms, would require less the constant watching of an attendant; but neighbor Vernon Burt, a strapping big fellow, with whom I talked yesterday, would vote as you do. Indeed, his out-yard has the eights run for comb honey, and the home the tens. During swarming-time he spends most of his time at his one out-yard. His mother and brother look after the home bees during his absence. As these colonies are larger, and are run for extracted, they do not require much of their attention. When the swarming-hours are over at the out-yard, Vernon returns home and gives these bees any attention, so far as room is concerned, that they may require. But suppose Mr. Burt had more than one out-yard. I think he would want the eight frames at home and the ten-frames at the out-yards.]

While I am about it, I may remark that friend B. says his ten-frame colonies, when made to occupy the whole set of frames during the breeding season, and are then contracted down to eight with a dummy, are just the ones to give more honey than those colonies that have been confined to the eight frame space all through. He would, if he were to start anew, have all ten frames, and these he would reduce, whenever it was to his advantage, to eight, by dummies. Here is one on the other side.—Ed.]

SMALL HIVES AHEAD IN HONEY; THREE MONTHS' HONEY-FLOW.

I see in GLEANINGS, Aug. 1, that Dr. C. C. Miller thinks it wouldn't make any difference what kind of hive he had if he could have a steady flow of honey for three months. When I send in my report, which I will do as soon as the honey season is over, the doctor will see that, the longer the flow of honey, the more need of having a hive that the bees will continue to store honey in. My bees are doing but very little at present in my large hives, while the small ones are piling in the honey as though they were going to work all winter. I have been careful to put a pencil-mark, with the date, on one of my best hives each time I have extracted.

I have just been and counted the marks, and find that I have taken the honey out 13 times. I looked in the hive and found it full again. I will take it out to-morrow. That will be 14 times this summer.

I have weighed the honey several times, and it would average 22 lbs. each time, amounting

to 308 lbs. I had 20 colonies to start with this spring (8 were small ones); I increased them to 30. I have taken out 3135 lbs. of extracted honey, and about 100 lbs. of comb honey. I don't want any one to think that all my small hives did as well as the one I marked, for they did not; but they all did much better than the large ones.

How would it do to cut the number in the tin tags and dip them in coal tar, or something black, then tack them on to a white hive? I think that would be the cheapest plan.

Bunkersville, Nev., Aug. 19. J. I. EARL.

[Cutting the numbers out in the tags would be much more expensive than putting them on with stencil or printing-press. The cutting would require a set of dies that would cost hundreds of dollars.—Ed.]

HOW BEES WORK ON STRAWBERRY-BLOSSOMS.

AUGER-HOLE ENTRANCES NEAR THE CENTER OF THE HIVE AN ADVANTAGE.

By *Elias Fox.*

I have been a silent listener to the long controversy as to whether or not bees work on strawberry-blossoms. I was indeed surprised to see the fact disputed, and by men who, perhaps, are old enough to be my father, and the difference of opinion is truly amusing. While I was at home on the farm my father kept a few bees, and we invariably raised strawberries; and it was as common to see bees working on the blossoms as to see them on the willow, dandelion, or any other blossoms in their respective seasons. When I left the farm, 13 years ago, I purchased two colonies of bees; and as long as I kept them here it was a common thing to see them working on strawberry-blossoms. After removing them from the village I did not raise any strawberries until the past two seasons. Last year I lost my wife about the time they were in bloom; and this year the sickness and death of my little boy filled my mind and heart with other thoughts, so I could not say positively whether they worked on them or not; but if they did not, it was on account of the atmosphere not being in proper condition for the secretion of nectar. The fact of bees working on white clover is not disputed; yet it is an undisputable fact that we often see fields white with it, and not a bee on it; while other years they will swarm on it as long as it lasts; but as for getting surplus honey from it in this locality, it is a rare thing late years. If the acreage of strawberries were as large as that of white clover, I doubt there being any dispute as to whether or not bees work on them.

I have heard it said a great many times that bees gather honey from corn-tassel; but I claim they do not—at least in this locality.

In regard to friend Miller's Straw, page 584, I would say I have an inch hole in or near the center of all my hives (front), and find it a great advantage, whether the Langstroth or a deeper hive, as the bees use it more in proportion than they do the entrance across the front at the bottom, and it seems to give a more perfect circulation, thereby lessening the liability of combs melting down in extremely hot weather, where no shade is used; at least, I used to be troubled somewhat until I tried this extra entrance, and since then have not had a comb melt; and when a swarm issues, this hole is crowded to its utmost. I may have something to say later on in regard to the 8 and 10 frame hive, and also the controversy concerning yellow bees.

Hillsboro, Wis., Aug. 8

[I should like to hear from you further on the subject indicated in your last sentence. I think we may now consider it fully settled that bees do work on strawberry-blossoms. And here is another that furnishes still further proof.—Ed.]

**BEES NECESSARY FOR STRAWBERRY-FRUITING;
INDISPUTABLE PROOF; A HARD RUB
FOR THE CARNIOLANS; JAPANESE
BUCKWHEAT.**

As to bees working on strawberry bloom, I would say that they do. I covered my strawberry-beds up with straw during the frosty nights of last spring, and uncovered them in the mornings, and by noon the bees would be fairly swarming on them. They worked on it equal to white or alsike clover. A few years ago I visited an extensive strawberry-grower a few miles from here; and after he showed me around the place I happened to see half a dozen or more hives of bees, and remarked to him, "I see you are a bee-keeper." He said, "Yes, I keep them to fertilize the strawberry bloom." He said that the only time he had failed to get a full crop was one season when it rained so much that the bees were not able to work on the blossoms except an hour or two at a time, and then only on the outside of the matted rows. He did not get any berries at all except where the bees worked. He told me he could calculate almost to a bushel as to how many berries he would get if the weather was fine when they were in blossom.

You will remember that I wrote an article in GLEANINGS a little over five years ago as to the stinging and honey-gathering qualities of the Carniolan bees. The breeder of these queens wrote me a long letter, but requested me not to answer in GLEANINGS, but to try them another year; so I have fooled with them ever since, getting more stings than honey. The first year I gave them ten frames in the brood-chamber; but as the surplus crop was a failure I concluded I would reduce them to eight frames the second season. They all wintered well the first winter; but long before the honey

harvest had arrived they had used up all of their honey, and had to be fed. They were meeker than Moses. I fed them by filling Mason cans with honey diluted with water, tying cheese-cloth over the tops of them, and inverting them over the brood-frames. When cans were empty I would remove cans and give the bees a quick shake in front of the hives to dislodge them; but every last one of them would have its sting fast in the cloth instead of letting go like decent bees. Well, four of them got to swarming, and their swarms swarmed so I got half of my swarms Carniolans. I used their combs for extracting-purposes, after they swarmed, to prevent increase. As to honey, the two that did not swarm did as well the second season as my Italians; but, how they stung when they were swarming! none of the family cared to be out of doors, as they were sure to be stung. No one would care to shake the bees off their combs, as they were afraid of being stung. To stand within ten feet of one of the hives in the fall, and look at them, they would come at you in a steady stream, which meant sure death if you did not make tracks immediately. They would drop on to any one like so many flies, and sting without any warning whatever. The stinging qualities of my bees have been increased over 50 per cent since introducing them.

Is it true that bees gather as much honey from Japanese buckwheat as they do from the gray and silverhull? I have heard farmers say that it hardly amounts to any thing for honey. At the south of me there is a large piece of common buckwheat, while in other directions there is nothing but Japanese. Well, the bees seem to prefer to go south—that is, the bulk of them. Two years nothing was sown but Japanese, and those years I got no honey from buckwheat to speak of. GEO. BROADBENT.

Factoryville, Pa., Aug. 12.

[Yes, Japanese yields as much honey as any other buckwheat, and very much more grain. The cases you mention do not prove any thing against the Japanese. All buckwheats some seasons fail to yield honey, and it is evident that difference in soils even on different farms not far apart makes some difference. Even if the bees do prefer to go "south" it may mean that the character of the ground in that direction is more conducive to nectar secretion.—Ed.]

CRIMSON CLOVER.

ITS BEAUTY AND PRACTICAL VALUE.

By L. Staples.

Crimson clover is an annual, and should be sown in the fall, in August, September, and October. It germinates very quickly, and grows rapidly through the fall and winter, and blossoms about May 1. In this latitude this clover can be sown after other crops have been removed from the ground, and in this way will

be of inestimable value in holding valuable nitrates in the soil that are otherwise washed out of the bare ground. It furnishes fall, winter, and early spring pasture, and enriches and stores up plant-food for next crop. A field of crimson clover in bloom is strikingly beautiful. Its marvelous beauty surpasses any thing ever seen in a field crop. It is good for hay; will yield from two to three tons per acre, and from six to ten bushels of seed. About eight bushels of seed is an average yield. The plant seems to flourish and do well in all soils, in a heavy clay as well as a light sand. Crimson clover makes a good bee-pasture, and every bee-keeper will sow a field of crimson clover as soon as he understands its value as a honey-plant. The seed being cheap, I predict that, when farmers see what this clover will do for them, they will scatter the seed on all vacant ground. Ten and twelve quarts of seed are usually sown on an acre. The ground should be prepared by plowing or cultivating shallow. Pulverize the surface, and cover the seed very lightly.



CRIMSON CLOVER.

Crimson clover is very hardy, and will succeed where the common red clover or wheat does. I think that, where failures are made with this plant, it is caused mostly by sowing imported seed. Always, if possible, obtain American-grown seed that is acclimated to this country, and a hay and seed crop is assured. No other clover remains green all through the winter; no other plant furnishes winter pasture like crimson clover. Every farmer and bee-keeper, and every lady who loves flowers,

should sow at least a small bed of crimson clover this fall.

Grand Rapids, Mich., Sept. 20.

[The cut below, from the *American Bee Journal*, gives another view of this truly remarkable clover. This, compared with our engraving in our Sept. 1st issue, p. 638, will give a good idea of the plant.—ED.]

BREEDING FOR CERTAIN CHARACTERISTICS.

SOME OF THE PRACTICAL DIFFICULTIES IN THE WAY.

By Dr. C. C. Miller.

I have read with a good deal of interest the article by another of the Miller family, on page 620. He makes the point that we should watch for the individual peculiarities of colonies, and treat them accordingly. There may be something in that; but it isn't so easy of execution, for it may take us the whole of a season, or the greater part of it, to get acquainted with the peculiarities of some colonies; and then, just as we get them learned, a change of queens brings about a radical change in disposition; for with each change of queen, half the blood is likely to be changed by the new queen meeting a drone of different disposition.

May we not, however, take advantage of our acquaintance with individual colonies so far as to select for breeding, so as to perpetuate and establish the traits that best suit us? Alas! again there must be much random work, because we have control of only one parent; and yet by persistent selection something may be accomplished. Here's a colony not as active as others. Instead of letting it requeen itself at swarming, we supply it with a queen from our most active colony. This new queen meets a drone of stock so lazy that there is no perceptible improvement. Still, the resulting workers will not be so bad as they would have been if the mother as well the father had been of bad stock. By continual effort at weeding out the bad and encouraging the good, even if we never pay the slightest attention to the suppressing of drones of bad colonies, in time there will be a change in the character of the drones themselves. Even if we have no direct control of colonies scattered all around us, in time these will feel the influence of our efforts, and we may feel repaid for years of persistent effort at breeding from the best. If we can not give the matter full attention, even occasional efforts will give proportionate rewards. Keep trying, some of the time at least.

HOW LARGE IS IT DESIRABLE TO HAVE COLONIES IN SPRING?

A sentence on p. 628 arrests attention: "Too large a swarm in early spring is not desirable, and never does as well when the harvest comes." Now, I wish Mr. Hand would go a little further and tell us what constitutes too large a colony, and why a colony of a certain size in spring will

not do as well at harvest time as one a little bit smaller. If we know what the best size is, it will be easy to avoid trouble, for there are usually colonies too small that might be strengthened from the overgrown ones; and even if all were too large, it would be an easy matter to destroy the surplus population each spring.

WILL QUEENS KEEP GOING BACK AND FORTH FROM ONE STORY TO ANOTHER?

I continue to be misquoted in GLEANINGS, to the effect that I found queens would not breed properly in two sections of a hive at the same time. I do not remember to have ever said any thing of the kind. Indeed, I have always said that I had no difficulty in that direction, and that my queens went readily of their own accord from one story to another. I think the misunderstanding came from my reporting that, when I confined a queen in an upper story to oblige her to lay there, she utterly refused to do any thing of the kind—quite a different thing from the other.

You may remember that C. A. Hatch said his bees would go from the lower to the upper story, but would not go down again, and I could not understand why mine should act so differently. Afterward I thought it might be that his top and bottom bars were such as to form a barrier across which the queen would not pass, while in my case a space of nearly an inch between the two allowed the bees to fill in a lot of comb in which the queen could lay and then easily pass to the other story.

But the question came up whether my queens would act in the same way with my new frames having top and bottom bars each $1\frac{1}{8}$ inches wide, having respectively a thickness of $\frac{3}{8}$ and $\frac{1}{4}$, thus making, with the $\frac{1}{4}$ inch between them, a space of $1\frac{1}{8}$ inches without any comb, across which the queen must pass to get from one story to the other. Despairing of success without some special means, I studied a good deal upon the matter, and finally made connection between the two stories by means of two dummies of inch stuff, the lower dummy having a $4\frac{1}{4}$ section of comb in its upper part, and the upper one having a section in its lower part, one placed in the hive directly over the other, no wood between the combs in the two sections, and a $\frac{1}{4}$ space between them. The bees promptly joined the two sections together, and the queen passed back and forth as I expected.

In order to compare, I tried one colony without this special help, and by some means the queen went in a short time from the upper to the lower story. Then, to give the matter a pretty full test, I put seven colonies on these frames in two stories. The combs were new, the colonies not overly strong, and there was no likelihood that in any case they would occupy more than eight combs. So I put four combs in the upper story and four combs in the lower story, leaving the queen in the upper story. If

I found eggs in the lower story after four or more days, then I would know to a certainty that the queen had gone below.

One colony was so weak that the queen could occupy only about three frames; and as these were all in the upper story, it was not strange she did not go below. Another remained in the upper story without going below, and I feel pretty sure she would have occupied more combs if they had all been in the upper story. As to the rest, however, the queens seemed to occupy one story as well as the other, altogether against my expectation. For instance, Aug. 22 I found, in No. 36, eggs in both stories; and also Aug. 26 I found eggs in both stories. That shows clearly that, during the week of Aug. 19—26, the queen must have made at least three changes from one story to the other. So I feel pretty sure that, as a rule, the queen will occupy two stories about as well as one, if the room in one story is not sufficient.

The question still remains, "Why do Brother Hatch's bees act so differently from mine?" I am wondering if it isn't just possible that his queens had so much room in the upper story that they did not feel the need of going down.

Marengo, Ill.

[Yes, your last sentence probably hits the key to the whole situation. How is it, Bro. Hatch?—Ed.]

EUROPEAN MATTERS.

THE FORTIETH CONVENTION AT LEIPZIG; KING ALBERT AND THE BEE-KEEPERS; THE INTERNATIONAL BEE-KEEPERS' CONGRESS AT PARIS; AN 82-CENT FOUNDATION-PRESS IN GERMANY.

By Charles Norman.

On and after the 10th of August, the fortieth convention of the German, Austrian, and Hungarian bee-keepers took place at Leipzig, kingdom of Saxony. As that well-known German bee-master, Mr. Gravenhorst, usually reports to you on these conventions, I restrict myself to a few remarks. There were over 1500 participants present—a number unheard of at our conventions—and the whole affair was a great success. King Albert, of Saxony, who had accepted the protectorate over the convention, made his appearance for an hour or two, and was honored as only monarchs are honored by their humble subjects. He was cheered at and cheered at; he was, wherever he stepped, surrounded by the happy bee-keepers, "like the queen-bee by her bees;" he was "speeched at" by several orators, one of whom even spoke of "us Saxons to whom our king is the star and pride of our life." I wonder what climax this man would have come to had he had to address the *highest* German monarch, the emperor.

Well, great as the success of the convention was, yet one German reporter says that the German-Austrian reversible honey-extractors

are heavy and clumsy tools, far surpassed by those manufactured in England and the United States; he also says that we Americans exhibit our honey and bee-keepers' supplies in a much better and more systematic way; and, furthermore, he says that our rules for the distribution of prizes and premiums are much more detailed, strict, and specified.

By Mr. Gravenhorst's *Bienenzeitung* I see that at Paris, France, an international bee-keepers' congress was held in July. The German exhibitors are said to have excelled there; and it is quite refreshing, in these times of chauvinism (just think of how the anniversary of the victory of Sedan was celebrated in Germany the other day), that the French bee-keepers treated the German exhibitors and visitors as brethren and friends in the fullest meaning of the word. That hatred and so-called patriotic rivalry which are sown and nourished between the nations by their rulers are an artificial, unnatural, inhuman feeling which exists in minds of criminal turn only.

On the European continent, foundation-mills are much less used than in this country of ours. Very many bee-keepers there make their foundation themselves on hand foundation-presses or forms. Of one of them, Rietsche's, between 6000 and 7000 have been sold. By the *Leipziger Bienenzeitung* I see that another one is manufactured now which consists partly of cement, and is said to furnish thinner foundation than the Rietsche press, and to work faster than the latter, as no brushing off, no rubbing-in of honey and the like, is needed; its price is also much cheaper, being only three and a half reichsmarks, or about 82 cents. Should the press break by falling down, the manufacturer repairs it for a trifle, as the wrought-iron frame, the most valuable part of it, can not break. To use the press it is previously laid in water for at least five to six hours. Before the work is commenced, the table has to be wetted thoroughly, and it must be kept wet as long as the work is going on. Reason why: The press has no rim to collect and gather the wax which is forced out by the manipulation. This wax flows partly down on the table, and partly sticks to the outer part of the press from which, when wet, it can be easily detached—which operation, though, has to take place only now and then, when a thicker crust has formed. After the melted wax is poured on the press, the latter is closed with the left hand, as the weight of the upper plate itself produces the necessary pressure. Then the press is immersed in water for a moment, is opened on the table, and the foundation is loosened from it in a certain way by applying horizontally the blade of a knife. It is advisable that an assistant take hold of the foundation to cut off what may adhere on its outer rim. Before one proceeds to make another sheet of foundation,

the press is again immersed in water; then it is opened, and what drops of water may adhere are let run off; what water does not flow off, is almost momentarily taken up (swallowed) by the cement.

I also notice by the same paper that a Mr. A. Enge, of Klein-Helmsdorf, has invented a machine to uncap honey-combs with. The depth to which the uncapping is done can be regulated. It can be done down to the septum. The machine has been exhibited and worked at the above-mentioned exhibition at Leipzig, and has "created quite an astonishment," and was rewarded with a premium.

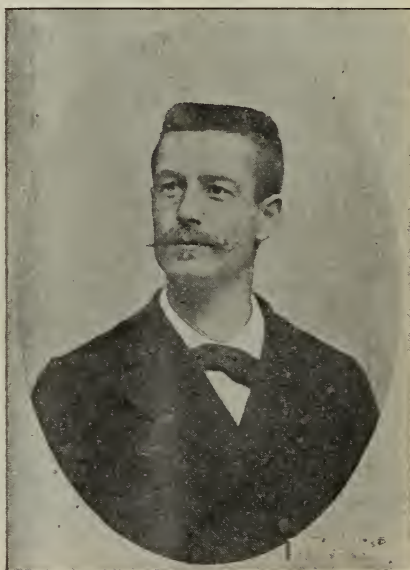
St. Petersburg, Fla., Sept. 16.

A LETTER FROM BELGIUM.

MORE ABOUT THAT CONVENTION WITH A MEMBERSHIP OF 2000 BEE-KEEPERS.

By Prof. J. Verlinden.

You have been sending me GLEANINGS regularly since 1892. It is certainly the apicultural journal which I read with the greatest pleasure. It is full of useful and interesting teachings; and the hours I have passed in translating it have been very agreeable. It is with impatience that I await its arrival at my



PROF. VERLINDEN.

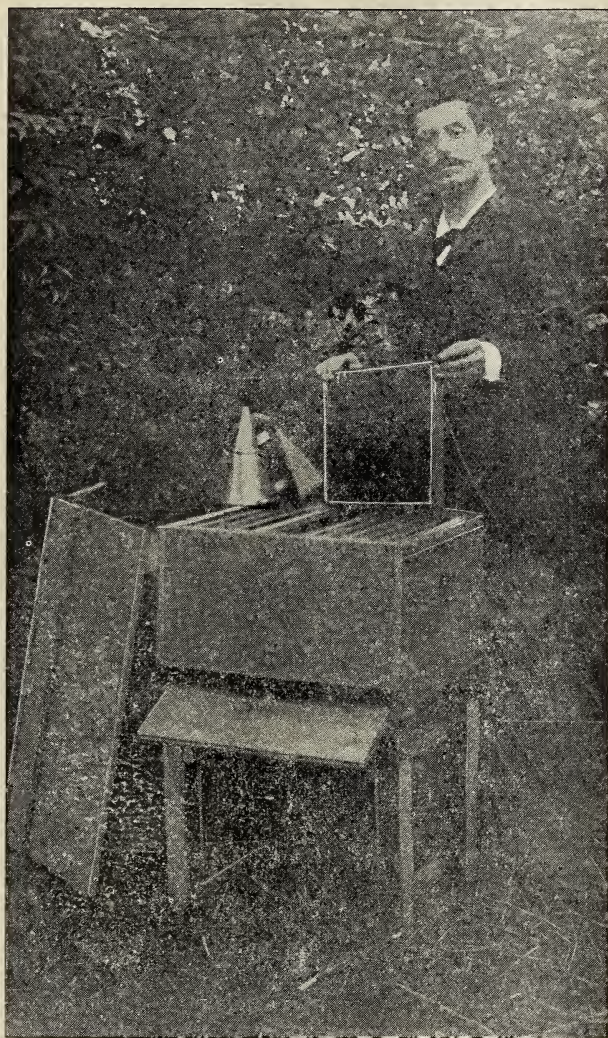
table, and I then run over it eagerly. In order to know better your Belgian correspondent who will henceforth write more frequently, I send with my letter three photographs. One is a plain vignette of your humble servant. Another represents me giving a talk on the bee;

for, aside from my duties as teacher, the government has commissioned me to give a score of conferences in this province. I can thus qualify myself as professor of apiculture; and this second picture shows Prof. J. Verlinden giving a talk, and explaining the mysteries of the hive. The third picture represents my family—my wife and daughter, taken four and

south there is a woods. The honey flora is not rich, hence there are not many bee-keepers.

Born Nov. 4, 1860, I was appointed teacher in school No. 3, in January, 1882. So for thirteen years I have kept bees here. I have had 37 colonies; but to-day I have but 11. I shall increase the number during the summer.

My straw hives are placed in a house-apiary



PROF. VERLINDEN INSTRUCTING HIS CLASS IN BEE KEEPING.

a half years ago. [The first two being the best I herewith reproduce them in half-tone.—Ed.]

Wasmès (Vom) is a city of 14,000 inhabitants, in a mining district. It has two churches, six brassworks, one tannery, four coke-ovens, one cork-factory, one manufactory of chicory and coffee, one brewery, two distilleries, three schools for boys and three for girls. On the

My straw hives are placed in a house-apiary having a capacity for 12 hives. It faces the south. The frames in the movable-frame hives, Dadant-Blatt type, are $16\frac{1}{2} \times 10\frac{1}{2}$; the other frames are $11\frac{1}{8}$ square. The hives are placed along a hedge, sheltered from the prevailing southwest winds, and face the east. The plan of the apiary was adopted two years ago. In front of the house-apiary there is a small space reserved for the cultivation of certain plants whose value as honey-producers I desire to ascertain. For example, there is borage, of which I sowed a packet of seed this year. Every year I renew the plantation, and make record of the going and coming of the bees to these flowers. That constitutes my apicultural sport. Near the house you see the poultry.

I have the black bee of this country; but in my apiary situated on the land of Mr. F. Rainbeau, at Grand Hornu, two miles from here, I keep pure Italians. Mr. R. is the Director of Mines at Grand Hornu and at Marles, France. He was Chief Equerry under Napoleon III., and he married the daughter of His Majesty's private secretary. He is very rich, and intimately related to the Rothschilds.

The flora being rich here, the honey-flow is of short duration. May and June are the two months when honey abounds. Extracting is done during the first half of July.

My heaviest yield (1888) was 70 lbs. per hive. The average is about 43 lbs. We get but little section honey, as it is but little used. Comb honey in frames is most used. Extracted honey is widely used.

After my honey is extracted I let it ripen in a large can, so that the watery parts may come to the top, and thus allow the denser part to

settle. Then, in order to make it granulate sooner, and have the granulation fine and thin, I beat the honey by means of a churn.

The honey sells for from 28 to 58 cts. per kilogram, or 2½ lbs.

GLEANINGS for Jan. 15 makes two quotations from *Progres Apicole*. Thanks. In your Jan. 1st issue, you say that "the Hainaut Bee-keepers' Association numbers more than 2000 members." The province of Hainaut, the most populous in Belgium, has about a million of inhabitants. Two thousand bee-keepers form a part of the federation; but many are not now in full membership. These 2000 members are divided into 34 sections, each one of which is entitled to three meetings a year. These three meetings are paid for from the treasury of the association. Besides, the sections can pay for additional meetings. Fifteen persons are commissioned to go over the province to give instruction in apicultural matters. The following year we form apicultural schools, like those already existing in Germany and in the United States. Each meeting teaches part theory and part practice at the apiary of one of the members of the association. The professor performs the operations. There are no very extensive apiaries in Hainaut. The largest, to my knowledge, does not contain over 50 hives. One person, half a mile from here, makes a specialty of apiculture. He has 250 or 300 hives in 7 apiaries, all straw hives, one story. He buys much honey of strangers, which he manipulates before sending it to its destination. The greater part of the members average only four hives.

In a future letter I shall speak of the different kinds of hives, and of the flora of each country in particular. I read with much interest Mr. Norman's Chat on European Matters. I hope he will not forget the Apicultural Federation of Hainaut.

Wasmès, Belgium.

[We are glad to hear from our Belgian correspondent, and hope we may hear from him further.—Ed.]

THE DARK AS WELL AS BRIGHT SIDE OF APICULTURE.

WOULD BE A PAUPER IF HE DEPENDED ON
BEES OR BERRIES.

By L. A. Dosch.

I have kept bees on a small scale for over 15 years. Last year we got a little honey; colonies were strong, and in good condition. White clover was burned out last summer by the drouth, also this year. The bees succeeded in storing a good portion of the fruit-bloom, and made a splendid start; but the drouth set in as early as April and May. It was so dry in Southern Ohio our corn would not come up. We had to replant and replant again to make sure of getting a stand of corn. The Big Mi-

ami River, which flows in sight of my place is so low that children wade it anywhere. All small creeks are dried up all summer. Farmers' cattle look poor—nothing but the bare earth to be seen in the fields. Cows can scarcely be kept in bounds by fences. Bitter weeds are devoured greedily if any are in sight. Farmers have been hauling water from the river all summer to plant tobacco, our main crop.

In the Miami Valley my bees never swarmed last year nor this summer. Bee-keeping as a business is out of the question in Ohio. Let the truth be said. Yes, we have some pleasant recollections of some very wet seasons ten years or more ago—so wet we could scarcely run a binder at harvest, for fear of sinking it out of sight. I wish we had some of those wet days. We could stand two every week. The wells are all going dry. Everywhere you can see the well-diggers at work sinking deeper and deeper for water. Never, in the history of Miami Valley, was there such long-continued dry weather. Hay is \$28 a ton; but farmers have none for themselves. There was very little to make. We are not saying this to complain; but these conditions surround us. Strawberries were of short duration; then raspberries came next. They came and went, but we scarcely realized their presence as it was so short. You might tell some people there is money in bees; but not the average Southern Ohio farmer. We do not write these facts to scare any one out of the bee-business; but I have read your Reports Encouraging and Discouraging, and felt prompted to write this for your readers over this vast land who used to live in good old Ohio. There seems to be a disposition on the part of your management of GLEANINGS to rather suppress such reports as this, and always speak in rather glowing terms of what the bees are doing for you. Now, we do not tell the half of what our suffering farmers have endured for the last two years; neither do we exaggerate in the least. That honey crops have been a dismal failure for a number of years is a fact, and we should be obliged to go around with our pants all torn if we depended on the "blessed bees."

We hope you will insert this letter, and not suppress a line, or cut out a line here and there, as you frequently do, until you cut it down to suit your taste, in trade-journal style.

Miamisburg, O.

[Friend Dosch, I have not a particle of doubt as to the truth of all you say regarding the weather; but there is a strain of uncharitableness in certain parts of your letter that I do object to most seriously; and that is, that we publish only the bright side of apiculture. If you will look at our back volumes you will see that we have published the dark side as well as the bright; but you should remember that bee-keepers are very much more apt to give their successes than their failures. Your last insin-

uation, that we cut and trim certain articles so as to pervert the meaning of a writer, is entirely without foundation. Much irrelevant matter that is written is necessarily struck out, otherwise GLEANINGS would contain 320 pages instead of 32. I would by no means say that the drouth is sent to you as a punishment for raising that which produces so much human misery as we all well know tobacco does; but how you can ask God to send you rain *in order* to raise a curse for your neighbors is one of those problems that are said to be past solution. "If ye keep my commandments, then I will give you rain in due season, and the land shall yield her increase," is a promise that I believe still holds good.

My good friend D., our stenographer, W. P. Root, submitted the above to me in reply to your letter. He wrote it immediately after reading your criticisms, suggesting it simply as a basis for what I might wish to say; and so, with the best of feelings in the world, I wish to add a little. Would a journal be profitable to its readers that would publish mainly accounts of floods, drouths, cyclones, and things of that sort? Where a lesson is to be learned, of course we can afford to give full particulars. But in the above you really, perhaps without knowing it, find fault with the dispensations of the Almighty. A year ago, when I passed through the southern part of the State of Ohio, I was delighted with the fertile fields and prosperous farming that met my gaze on almost every hand. I wonder if some of our readers in your locality can not give us something more cheerful, even though you have experienced every thing you mention. While your letter was in my hand, our book-keeper called my attention to the following:

My bees are doing finely. Hives run as high as 12 lbs. per day. I have them in the midst of 200 acres of alfalfa. R. L. SNODGRASS.

Gordon, Kan., July 18.

And the above, as you will notice, comes from drouth-smitten Kansas—the State that has suffered so much that for years it was almost a proverb. I quite agree with what my friend W. P. says in regard to the tobacco business. If I were engaged in any such industry I certainly should not think of asking God to bless my daily tasks.—A. I. R.]

NEW MEXICO AS A BEE-COUNTRY.

SIX MONTHS' HONEY-FLOW; A FAILURE OF HONEY CROP UNKNOWN.

By T. S. McClure.

Not since the brief mention made by Mr. Root on the occasion of his visit here several years ago, has any thing appeared in GLEANINGS with regard to bee culture in this place; yet this quaint old town on the Rio Grande can give reports all along this line that can be equaled by those from very few localities.

Here, within a radius of five miles, are two thousand colonies of bees, nearly all pure Italians, in eight-frame Langstroth hives—a rather crowded range, some will think; but the average yield per colony is just as high as when there were only ten stands of bees in the valley. The honey season begins with the fruit-bloom, in April; very soon afterward the surrounding mesa, mile upon mile, seems fairly alive with the busiest of bees, gathering the

fragrant nectar from the far-famed mesquite. Early in June we should have on each hive a full super of the whitest and most delicious honey that can be produced in the world. After, perhaps, a slight check, comes the alfalfa harvest. This plant blooms four times during the year; but the nectar from the later crops comes mingled with that of many wild. The tornillo yields as good honey as the mesquite; but much of the product of the late bloom, which lasts until October frosts, is of poor quality, and of amber hue.

What do you think of a six-months' honey season? And the best feature of all is, that a failure of the honey crop has never been known, nor has any disease ever appeared among the bees.

The pioneer bee-keeper of the valley, Mr. S. W. Sherfey, says that, in his sixteen years'



THOSE PETS.

experience, one year only was unfavorable, and he then averaged over 50 pounds of comb honey to the hive. The veriest novice is dissatisfied unless he is able to produce 100 pounds of comb honey to the colony, besides quite a quantity of extracted.

Bees always winter well out of doors, eating comparatively little, and requiring no attention.

A PLEA FOR ADOBE DWELLINGS.

When Mr. Root visited our town he was enthusiastic over our orchards and meadows, but gave his readers a very bad impression of our mud-built houses. Pardon a brief digression, and allow me to put in a plea for our adobe dwellings. With walls often several feet thick, which can defy alike the most intense heat of summer or cold of winter, the adobe is the house for the climate. Frame and brick houses are common, but are very much in disfavor. The adobe admits of a finish as

fine as marble. The pleasant roomy frame house with its wide verandas, which Mr. Root visited, and described as being the only frame house that he saw, *was entirely an adobe building.*

The numerous readers of GLEANINGS would be more than pleased to welcome Mr. Root should he ever carry out his expressed intention of visiting our valley again, and for a longer time.

[Our friends sent along a couple of photos, one of which we have reproduced in half-tone. In answer to a letter asking for the circumstances connected with the swarm on the hat, McClure Bros. write:]

THAT SWARM ON THE HAT.

The picture of the bees on the hat was secured in the following way: A photographer happened to be taking some views of our apiary, when a swarm came out. The apiarist shook a few of the bees on his hat, and about half of the swarm settled there, and a view was taken. We have an apiary of about 300 hives. The present honey season has been more than usually good, and that is saying a good deal. We ship a carload soon.

McCLURE BROS.

Las Cruces, N. M., Sept. 11.

QUEENS SLOW TO WORK IN AN ADDED STORY.

By Dr. C. C. Miller.

Some of my experiences as to queens working in more than one story seem rather contradictory. When I have tried to force them to work in a story added above or below, they have seemed very stubbornly against it. I formerly had an impression that a queen in full laying, if changed into a different story or apartment, would be obliged to lay at least for a short time, and that, rather than let the eggs go to waste, she would lay them in any kind of cells to which she had access, providing they were not too deep.

In some cases I raised the story containing the brood-nest, put the queen into an empty story below, and put an excluder between. I have no exact memoranda of results, but I think there was no case in which she continued laying right along, and I think there was always at least a day or two of sulking.

Last year I tried to get brood in some half-stories by adding them above or below with an excluder between. They contained both foundation and old comb. The result was much less satisfactory than any thing ever tried with stories of full depth. I hardly think the depth of the stories had any thing to do with it, but the season was poorer. Looking at my book, I find I put a half-story over No. 57, May 14, A. M. May 15, P. M., I found no eggs, but found some May 16, A. M. I think this was one of the most successful cases.

At the other extreme was the case of No. 76. May 17 I put the queen above. By some means it was left till June 14, just four weeks later, when I found no brood or eggs in the upper story. Neither was brood to be found, nor eggs, in the lower story. I then put the queen into the lower story, and thought all would be well. But eight days later I found no eggs, nor did I find any later; and July 2 I found the old queen on the ground in front of the hive, when I killed her and ended the colony. A case of stubbornness with a vengeance, wasn't it?

In the same line of witness is the fact that it is an exceedingly rare thing to find a queen laying in one of my supers, although there is nothing to hinder a queen any more than a worker from going up. In this case, however, it may be that conditions are not to her liking as to thickness of comb, and separators may have something to do with it.

QUEENS GO READILY FROM ONE STORY TO ANOTHER.

On the other hand, I have had many cases in which queens have gone of their own accord into an added story above or below; and I think in every such instance they have continued to go back and forth, keeping up the brood in both stories. Friend Hatch says his queens will go into a second story; but, once there, they never go down again. When I first read that, I wondered just a little whether there might not be some chance for mistake somewhere; but I have great confidence in the man. It is possible that his different experience comes from different conditions. I wish he would tell us what kind of top and bottom bars he has, and how much space between them.

In my case, the top-bars were $1\frac{1}{2}\%$, and the bottom-bars $\frac{3}{8}\times\frac{1}{4}$, with a full inch between them. The space between was filled with comb, so that really it wasn't so very different from a single story with frames of double depth.

SHALL THE BROOD-NEST BE ENLARGED HORIZONTALLY OR VERTICALLY?

□The question as to whether a queen will go back and forth from one story to another becomes one of importance to those who think as many as ten frames or more are needed during part or the whole of the year. I confess that I am at present inclined to enter the camp of such believers. Having handled extensively both ten-frame and eight-frame hives, the compactness of the latter, together with ease and convenience of handling, is such that I am loath to go back to the ten-frame hive.

If as good results can be obtained, or even if nearly as good results can be obtained by using two stories a part or the whole of the year, avoiding thereby the lifting of the heavier hives, then I want to hold on to the eight-framers. This will hold especially true with such as now have eight-frame hives exclusively, for a change to a larger size would mean a

heavy expense; whereas the trial of two stories of a size already in use would cost comparatively nothing.

With my present light, if queens will be induced readily to occupy two stories, here's something like what seems desirable, only with two seasons of utter failure I know practically little more about it than I did two years ago: At the beginning of spring, give a story of combs below with some honey, so that there will be abundance of stores, and so that the queen can occupy as many frames as she likes of the sixteen. At the beginning of the honey-harvest, whether the whole sixteen frames shall be left, or whether the number be reduced to 12, 10, or to a single story, is a question on which I desire more light. In any case, at the close of the white-honey harvest two stories will be put or kept in use, remaining till perhaps October, when one story will be taken away till spring. If the hives were to remain on the summer stands there would be no need to take away one of the stories at any time of the year, unless thought advisable to do so during the harvest.

I am very much afraid, however, that, with such frames as I should like, and with the desirable absence of burr and brace combs, the queen would not readily go from one story to another. Possibly that might be remedied by some sort of ladder of comb from the first to the second story, so the queen could go from one to the other without setting her dainty feet down upon wood.

I shall read this article with much interest when I see it in print, but I shall skip all but the footnote. I shall also look with interest for the kindly criticisms of others, for I very well know that I'm talking on a subject about which I know very little, but desire light very much.

Marengo, Ill.



FEW UNFINISHED SECTIONS IN THE FALL.
HOW NOT TO HAVE THEM; BEES CLUSTER-
ING OUT; WHEN IT IS AND IS NOT A GOOD
SYMPTOM.

Question.—Nearly every fall I have half or more of my sections in the unfinished or uncapped state; and especially is this the case the present fall, when nearly two-thirds of them are unsalable on account of not being capped over. Will you please tell us in GLEANINGS how this may be obviated?

Answer.—How to manage our bees so as to secure the greatest yield of comb honey is a question of great importance to all those who are engaged in producing such honey for mar-

ket; hence we often have articles on this topic giving us instructions regarding it. But comb honey is of little value unless properly finished or capped over; so that the thing which our questioner puts before us of "how to manage our bees so as to have few uncapped sections in the fall" is a question of nearly as much importance to us as the one spoken of above, which has occupied the thoughts and writings of very many. For years I was troubled by having from one-fourth to one-half of the combs in the sections not fully sealed at the close of the honey-harvest, which were salable only at a reduced price, if at all; but of late I have but few of such, even in a poor season. After experimenting for a year or two regarding the matter, I became convinced that the cause of the trouble was in giving the bees too many sections; and especially conducive to this was the plan of tiering up sections late in the season. How often have I, years ago, spoiled a promise of an abundant yield of comb honey by tiering up four or five days before the honey-harvest closed! To tier up sections profitably requires considerable tact; and especially do we want a thorough knowledge of the honey resources of the field we occupy. I often think that there is too much injudicious talk in some of our papers in regard to not allowing the bees under any circumstances to cluster on the outside of the hive, the idea being generally conveyed that, when bees thus cluster out, they need more room. Now, it depends upon when this clustering-out occurs, whether more room is needed or not; and hence I say "injudicious talk." If the clustering-out occurs at the commencement, or in the height of the honey harvest, then more room should be given; while, if at the latter part of the harvest, or in a time of honey-dearth, no more room is needed; for more room at this time results in the one case in many unfinished sections, and in the other an absolute waste of time used in enlarging the hive. To illustrate: During some seasons we have but a few days of honey secretion, and that often after the flowers which produce the yield are rather past their prime. At such times we often do not have on the hive one-half of the capacity which we would use in a good season, and for this reason the bees begin to be crowded out. Hoping that the weather may be good during the rest of the time that the flowers are in bloom we give double the room to our colonies, only to have it turn bad weather again, thus giving us only partly filled sections in the fall; while, had we left them as they were, all would have been finished. Well do I remember one such season when, in time of basswood bloom, we had bad weather up to the middle of the bloom. At this time I had on each hive a surplus capacity of about twenty pounds, when all at once the yield of honey became abundant,

and the bees began to be crowded out. Hoping that the weather might be good for some time, I spread the sections on a few hives by placing some empty ones between those nearly full, giving at most only about 40 pounds capacity, while, when all is favorable, I use 60. The result was, that the bees immediately took possession of the empty sections, while the weather turned unfavorable again; and when the season was over I got no more than five to ten pounds of capped honey from these hives, while those not touched gave twenty pounds of nice capped honey. In this case the bad weather was the cause, for the spreading was not carried far enough to be unreasonable; but in former years I have been the cause of the trouble by spreading or tiering up but a few days before the honey-harvest closed.

Again, after the basswood bloom had fallen there came on a very hot spell when not a bit of honey was to be obtained; and the result was, that the fronts of the hives were black with bees. According to the advice above alluded to, I should have given more room; and if the bees then persisted in clustering out I should smoke each colony until they all went in and stayed there. Any one can see at a glance that this would be just a waste of time, as the bees were doing just as well for me by clustering on the outside of the hive as anywhere. But, to return:

My plan of operation to secure all capped sections at the close of the honey-harvest is as follows: When the bees show, by building bits of comb here and there about the hive, that they are securing honey from the fields, I put on sections to the amount of about 20 pounds, and leave them thus till the bees are well at work in them, when I add about 10 pounds more room by placing it at the sides of those first given them. When this room is fully occupied, I give more room at the sides to about the same amount given before; and were I using the tiering-up plan, I should have my surplus-arrangements so arranged that, at this time, I could raise up about one-half of the sections already on, putting empty sections underneath them. Instead of raising up the whole 30 pounds, thus giving them more room, a little at a time, as the bees have need. By the time the bees fully occupy the room last given at the sides, the first 20 pounds given them is ready to come off; and when this is taken off, the partly filled sections on either side are drawn together over the center of the brood-nest, and empty sections given at the sides again to the amount which I think they will need. Thus I keep taking off and putting on sections, taking the full ones from the middle, and putting the empty sections at the sides until the season begins to draw toward its close, when, as fast as full ones are taken from the center, the others are drawn up till

the space is contracted to the original 20-pound capacity, or even less if I think it necessary. In this way the bees are given all the space they really need, while the chance for many uncapped sections in the fall is quite small. By a little study the tiering-up plan can be made to conform to the above, and worked on the same principle. I think that any plan which requires the tiering-up of from 30 to 40 pounds capacity, or the spreading-out of the same number of pounds at one time, is faulty, and a wrong policy to adopt, while the giving of a medium amount of surplus room as needed seems to me to be a wise course to pursue.



HOW AND WHERE TO KEEP COMB AND EXTRACTED HONEY.

Ed. Gleanings:—Can you inform us, or some of your readers through the columns of GLEANINGS, the temperature that extracted honey can be raised to with safety so it will not regranulate again? also the proper temperature for keeping comb honey.

We notice that the sale and consumption of honey in comb is greatly reduced by honey being held in fluctuating and cold temperature; whereas, if kept in an even high temperature it would not chill nor granulate, and become premature old honey to all appearances.

We have spacious rooms that we use for cold storage of butter and eggs in the summer, and are now emptying them and contemplate heating those rooms to the proper temperature for comb honey. These rooms are so protected that they can hold any temperature, so they will not vary five degrees in six months.

We believe that will be a great benefit to the honey placed in our hands for sale, especially for such as comes to us before cold weather. We think one reason why honey sells best, and gives best satisfaction in the early part of the season, is because, in the later part of the season, it has been exposed to extreme changes in temperature, and it stiffens or granulates in the comb, and the consumer, buying such once, doesn't want it again. We do not know of a honey-dealer who keeps honey in a warm room, but generally in an open store, where the doors are not closed in many places in the coldest winter weather. We know of two hundred cases of honey that was carried over winter in that way, and is now unsalable except for bee-food. The holders say it came to them December last, and was granulated then, and would not sell. I should like to hear opinions on the practicability of furnishing an even high temperature for honey; and I think that, if

grocers and holders of honey come to realize that cold temperature injures honey, many of them will not keep their stock of honey in the coldest part of a store, and, in many cases, in their ice-boxes, under the false idea that honey must be kept cool.

H. R. WRIGHT.

Albany, N. Y., Sept. 21.

[Good extracted honey, if brought to a temperature of not over 180° Fahrenheit, bottled and sealed *while hot*, will usually, if kept in a uniformly warm temperature, keep liquid for a year or more. Indeed, we had some fine clover honey, treated in this way, keep liquid for two years. But there is a great difference in honey. Some will candy much quicker than others. The riper—that is, thicker—the honey is, the longer it will keep liquid.]

Cold atmosphere is quite favorable to candying of both extracted and comb.

The temperature of the storage-room should be about that of a living-room—70°. Higher would do no harm, but is inconvenient and expensive.

Cellars and cold rooms, especially when subjected to freezing, are poor places for honey.

In melting candied extracted honey, the temperature should not go above 180°, otherwise the fine flavor will in a large measure be destroyed. The usual way is, to place the vessel of candied honey in another larger receptacle containing hot water.—ED.]

THAT HIVE DISCUSSION — WHY IT SHOULD BE CONTINUED.

Last number of GLEANINGS is at hand, with intimation that the discussion concerning big and small hives ought to cease, because it is a matter of locality. I have also received a private letter from a prominent bee-keeper expressing the same opinion. Now, right here I want to enter the *very biggest* kind of a protest—that, precisely because it is a matter of locality, it ought be fully discussed. We ought to ascertain in what localities and for what kind of honey-flows large-sized brood-nests give the best results, and where and under what circumstances small brood-nests are best. Methods of managements are to be taken into consideration, as the management in any given case must vary with the kind of hive employed.

ADRIAN GETAZ.

Knoxville, Tenn., Sept. 20, 1895.

[As we have received a good many letters of similar import, and only one protest against the hive discussion, we will hold our columns open for a while longer. The question, I think, is indeed an important one, and personally I should be very sorry to have it stopped now—just on the eve of getting, as I think, a few more pointers and a better understanding of what *locality* has to do with it.—ED.]

THAT HIVE DISCUSSION.

Keep up the discussion about the size of hives. I have tried from one up to twenty frames, and prefer ten to either more or less. I may tell you the reason why, later, if you care to know.

West Lodi, O., Sept. 5.

JAS. BOLIN.

[Yes, by all means let us know.—ED.]

THAT NICE HONEY OF YORK'S; IS IT FROM THE ROSE OF SHARON?

In reading GLEANINGS for Aug. 15, page 637, I see that you have had a visit from Mr. York; and the description of his honey exactly answers mine; and as I had been trying my best to find out its source, I thought I would write you to say that the only possible source seemed to be the "rose of Sharon." My apiary (three hives) in our place is in a well-built-up town; but as the rose of Sharon is a pretty flower, nearly every yard has one or two trees of it.

If the tree named grows in near Chicago, Mr. York will undoubtedly find it the source of his honey. Perhaps I should mention that there are two kinds of the flower—the single and double; and while I could never find a single honey-bee on the single-flowered bushes, they fairly swarmed on the double, both red and white. The honey I have looks almost black in the comb; but when held up to the light it looks quite light.

Have taken 50 lbs. of comb honey from my hives this year, 2 colonies spring count, the most of it being this rose of Sharon, and the rest about 15 lbs., being basswood. Fall flowers are in full bloom, giving plenty for winter, and perhaps a little surplus.

E. LOIZEAUX.

Plainfield, N. J., Sept. 10.

[I don't know whether Mr. York has the rose of Sharon in the vicinity of his bees or not. The only way to prove whether the honeys are one and the same is to exchange samples.—ED.]

SQUARE IRON TANKS OF LARGE CAPACITY FOR HONEY-STORAGE IN AUSTRALIA.

A few months ago I read some articles in GLEANINGS about the fitness or otherwise of galvanized-iron tanks for storing honey, such tanks being principally used in California by large honey-producers; but I haven't seen anybody recommending the tanks I use. The tanks I have for honey-storing are square iron tanks, made of stout iron plates, the seams closely riveted, very strong, and painted red outside. These tanks are used on board ships for holding water, and are also sent out to Australia filled with groceries, but principally with malt for the breweries. They hold 200 to 400 imperial gallons, equal to 3000 and 6000 pounds of honey.

I have at present eleven of those tanks in use—six of 6000 capacity, and five of 3000; three of them for over eight years in use, and they give every satisfaction. Some have had honey in them for 3 or 4 years. Before using I clean them well, and wax inside.

FL. PETERSEN.

Wattle Flat, N. S. W., Australia, July 25.

[If I understand you, these tanks are of plain iron—i. e., ungalvanized. Such tanks, especially if waxed inside, would no doubt give good service; but they would be rather expensive. Plain iron, if painted on the outside, would be just as good, and perhaps better, than the zinc-

coated metal. Honey, when in actual contact with iron, is an excellent rust preventive, and it is possible such tanks as you describe, and not coated with wax inside, would do very well.—ED.]

STAMPED NUMBER-TAGS FOR HIVES.

To those who want a hive-number, and are not afraid to pay for a good article, I will say any stamp-works can furnish you brass checks, $1\frac{1}{2}$ to 2 in. in diameter, $\frac{3}{32}$ thick, with number stamped on, and a hole to put a screw through. These will last 100 years, and then be good for 100 years more. Drive a brad in the front of the hive to hang them on. I use them. Cost is nominal.

F. H. RICHARDSON.

LaCade, Mo., Sept. 3.



W. J. C., Okla.—Bees will work on a ripe watermelon that has been broken. During a scarcity of honey they are quite apt to take any broken fruit while the juice is running. They would not gather enough in any case from a watermelon to do any perceptible harm to the winter stores.

H. M. S., O.—Years ago, as you may have noticed in the A B C book, we lost quite heavily, owing to the fact that the honey made from cider killed the bees during the winter. A safer way would be or you to extract all the cider honey, and feed sugar syrup. The cider mixture may be given them next spring, when it will do no harm.

J. B., Va.—If you have difficulty in finding your queens, use queen entrance-guards, illustrated and described on page 11 of our catalog. Attach one in front of the hive, and shake all the bees down at the entrance. As the bees pass in, watch for the queen. She will be barred out by the zinc, and can be easily caught. This plan is often used in finding black queens; and if you have defective eyesight it is one that you could probably use to good advantage.

W. W., S. C.—We usually advise bee-keepers to stay where they are. Bees do pretty well in almost any locality of the United States. California (at least the southern part of it) stands at the head; then comes Colorado, Arizona, Florida, New York, and Pennsylvania. But certain portions of the States named are barren of honey. If you have any particular locality in view you had better write to some person at the postoffice, and learn whether bees are kept; and, if so, whether they pay.

G. R., Ky.—It all depends upon the season of the year as to how soon the black bees will disappear after the introduction of an Italian

queen. Forty-five days might be long enough during the busy part of the summer; but I should expect to find a few back fellows in the hive all summer. If the queen be introduced in the fall, you will likely find black bees in the hive all through the following spring. As to how to Italianize, we would refer you to first column of page 32 of our catalog, third paragraph; or, better, the A B C of Bee Culture.

HANS MOURNS THE LOSS OF HIS BEES.

I haf much truble mit mine bees,
Dey haf dis vinter most all freeze;
Dey gets all ofer frose,
From der het down to der toes;
Und I say, "Hans,
You know yust how der munny goes,
Ven you py some more bees."
Oh my! I veel so very sad;
Dis vinter use mine bees so bad.
I denk I take der rest
To pet mit me
Und cuver dem yup mit der close
To keeps dem from geding any more frose.
Mine vife Beky says she yust knows
Der bees no like to be shut up mit der close.
I denk, "Hans, you nose not
Vot you bees about,
Or you deach does bees
Rite away to eat some krout,"
Den, oh my! you shmell dot hunyes
Yust forty miles away.
I yust vait und see
Vat mine vife Beky haf to say.
Mine vife Beky say I make someding out.
Ve yust swweep dot room and clean it oud,
Und bring in does bees,
Und dot barrel of krout,
Und does bees makes honeys
All de vinter oud.
Dot vife Beky she bees so smart
I yust lofe her mit all mine hart.
Ven we bring does bees in,
Von dakes mine vife on der chin.
I say, "You look a liddle oud,"
Ven von sthicks her on der shnout.
She runs to dot barrel of krout—
Dot dakes der pain already oud;
I haf no dout does liddle bees
Yust would like some limberger cheese.
I see all does big bee mons
Gifes problems to make oud;
Und I yust gife dot problem
Apout der bees und krout.
Dey can yust tole me
If dot hunyes don't bee so very fine
I denk I ot to no dot,
Ven I eats him all der time.
I denk if does bee mons
Solf dot problem oud
Apout mine bees und krout,
Dey will haf to sharpen der prain,
Und shweep the cobwebs oud;
But I bees so happy.
Und ven I dakes der hunyes oud
I can yust shmell
It bees flavored up mit krout.
I feed mine bees limberger cheese und krout,
I denk I peets all der bee mons
Geding der hunyes oud.
Der bees none flafared so nice as mine,
I denk it bees so very fine.
Ah, Hans, old poy, you bees smart;
Of does bee mons you gets der sthart;
I yust lofes dot hunyes mit all my hart.
Vots der madder mit dot Rambler?
He says such funy dings,
He no likes the vimens—
Dey bees angles
Mit der liddle vings;
I denk if he bees a noin,
Der liddle wings dey bees a groin'.

HANS VONDERBLINKEN.



We are uniting, and shall begin to feed this week.

So many have asked to have the hive discussion continued, and as only one votes against it, we decide that it is the wish of our readers to compare notes along this line a little further.

THE usual article from Rambler, owing to a misconnection, will have to be omitted from this number. His "Echoes," however, is a good substitute. The series will be resumed in our next.

I HOPE that committee appointed by the last convention in Toronto, to formulate a plan or a basis of consolidation of the North American and the Bee-keepers' Union, will be ready to report soon. Let's see; this report was to be forthcoming within a month; and that time will be up now in a few days.

GLEANINGS from now on till Jan., 1897, to new subscribers, for the price of one subscription—\$1.00; or four-months' trial subscription for 25c. A large number of extra copies are printed for this number; and if you happen to be one of the new acquaintances, we hope such acquaintance may be continued.

THAT half the California honey is adulterated (see article by C. W. Dayton, in this issue), is a condition of affairs that I can not believe is true; and if not true, I'd like to see it disproven at once before it finds wings and flies like wild-fire all over the country. The bee-keeping interests have suffered already fearful damage by false reports. Now, ye Californians, let's have the truth; and if you can not give us facts, give us honest expressions.

A BEE-KEEPER so well and favorably known through the frame bearing his name, Julius Hoffman, of Canajoharie, N. Y., and whom I visited on my first bicycle-tour, has recently lost a little five-year-old girl, "the pet and sunshine of the home." The home seemed dreary and sad after this loss; but the cup of sorrow was not full yet; for, on the 2d of September, the eldest son was taken away. GLEANINGS extends its sympathies.

WE receive about this time of the year a good many specimens of honey-plants for identification. Some of them we can name, but many of them we can not, owing to the fact that the plants are dried and often badly mutilated. We formerly, at some expense, employed a botanist to name all such specimens, through these columns; but beyond the satis-

faction to the one furnishing the specimen in knowing the name, there was but little interest in it, and the Botanical Department was discontinued. If you forward specimens to your State Botanist at the capital, or wherever the agricultural college is, he will give you the name and other information regarding the plant, free of cost. If you have no such botanist, write to us and we will do the best we can; but be sure to send fresh specimens in as full bloom as possible, and see that they are properly packed so as not to receive damage in the mails.

NEW METHODS VS. OLD.

THE editor of the *Progressive Bee-keeper*, in commenting on the fact that we had gone back to the old-fashioned method of raising queens, has this to say:

I too find it more pleasant and profitable to rear queens (in fact, do a great many things) the way I first learned how. I never form nuclei until after the queen-cells have been built in full colonies, and I proceed as follows: I select strong colonies, and take the queen and all the brood from them. In place of these I give them a frame containing eggs from my breeding-queen, in which they will build queen-cells. When the cells are capped over, I transplant them to eight—all but the two outside frames—and leave all alone for a day or so, when the bees will have them all glued fast to the combs. Should there be more than eight cells, I destroy the poorest ones. Should there not be eight cells, I use them in the manner stated above as far as they will go. When all is ready I divide up this colony into as many nuclei as I have frames with cells attached, and add to each nucleus a frame of brood from some other part of the apiary. This method may not be scientific, and it may be a slow and expensive way to get queens; but I am sure I get good queens this way, and with me the above is the "good old way."

FEEDING SUGAR AND COLD WATER; IS PERCOLATION NECESSARY?

NEIGHBOR VERNON BURT fed his bees this year with sugar and cold water of equal proportions, without resorting to percolation. Of course, the sugar did not all dissolve before the first feed was taken; but more water was added at the next round, until it was all taken up. It is possible that this plan will answer very well providing the bees are fed early, or not later than October 15. for this locality.

Mr. F. A. Salisbury, of Syracuse, N. Y., has for years fed his bees with a food prepared by mixing equal parts of sugar and water in an ordinary extractor, the reel of which is revolved until the sugar is incorporated into the water. We have tried this, but could not succeed in making a clear syrup—much of the sugar would still remain undissolved, and we accordingly used the percolator plan last fall. I am now beginning to feel, however, that a perfect union of the water and sugar, so that a clear limpid syrup is the result, may not be essential; that a mixture of sugar and water, even though

if the former is not all dissolved when fed early enough for the bees to ripen it, it may answer just as well. If this is true, it is not necessary to go to the expense and bother of using artificial heat and more or less elaborate melting-tanks.

Last year we proved, to my satisfaction at least, that syrup made by the percolating process was just as good as that made by the use of artificial heat, and far more convenient to make and feed.

As a caution, I want to say again that, for late feeding, or when the nights are cold enough to make the clusters contract up, it probably will not be safe to feed this half-and-half cold mixture; old-fashioned thick syrup—two-thirds sugar and one-third water, thoroughly mixed in a melting-tank over fire, should be given.

It occurs to me that, having mentioned the percolator feeders, I ought to describe briefly the one we used last fall, for the benefit of new subscribers. Into a one or two gallon crock put by measure an equal quantity of sugar and water; be sure the crock is level full. Over said crock lay three or four thicknesses of cheese-cloth, and on top of this a large dinner or pie plate. Invert the whole, set it in the upper story of a hive, and it is ready for business. Sappails, without bails, and cleated boards in lieu of plates, may be used, and, on a smaller scale, a saucer and common tumbler.

Later.—Since writing the foregoing I have had a talk with our apiarist. He doesn't feel so hopeful that the mixing of sugar and cold water, without running it through a percolator, will do. At all events, the sugar-and-water mixture doesn't seem to be accepted very readily from the Miller feeder. The trouble is, the sugar settles to the bottom, and the thin watery portion rises to the top, where the bees are, and is so thin, indeed, that they do not take to it. In the case of the *crocks* and plate, above mentioned, the bees work at the *bottom* near the sugar, or where the syrup is the thickest.

OUR LATEST PERCOLATOR FEEDER.

We are now using, with great satisfaction, cleated boards with a three-inch auger-hole in the center, in place of the plates. The crocks are filled half and half, as previously explained; the flannel or cheese-cloth is then laid over, after which the cleated board with the orifice in the center. The whole is reversed, and the percolated syrup is taken by the bees at the opening in the center of the board now under the crock. We prefer this arrangement because the bees take the feed faster.

If you wish to know how to make a large percolator—one that will give you a half-barrel of syrup in a few hours—see GLEANINGS for October 15, last year, page 804. If you do not have the copy, we can send you one for 5 cents. Of course, these large percolators are used only

for making syrup indoors, the syrup being fed in the regular way in ordinary feeders.

DEATH OF DR. C. V. RILEY.

THAT distinguished scientist, Prof. C. V. Riley, who, till recently, held the position of United States Entomologist, which he resigned but a short time ago, died on the 14th of last month as the result of a fractured skull from a bicycle fall. In his special department of science (entomology) he seemed to be without a peer. In his official capacity he rendered important aid to the farmer, and especially to the fruit-grower, by discovering ways and means for the destruction of insect-pests. From the last *Scientific American* I take the following:

In the past few years, two of his studies have produced epoch-making results. One is his famous emulsion of kerosene oil, milk or soap solution being the emulsifying agent. Having found that this was an infallible insecticide, he had to devise means for applying it, and invented the "cyclone," "eddy chamber," or "Riley system" of nozzle for spraying it upon trees. Another of his achievements was the introduction of the Australian ladybird, *Vedalia Cardinalis*, into California, to destroy the white scale, which was then ruining the orange-groves. The result was simply magical. Since then the insect has been introduced elsewhere. It is interesting to note that other attempts of the same sort that have been made in California, against other insects, either against his advice or without his endorsement, have not had the same success. His discoveries in relation to the phylloxera alone were enough to give him international renown, and his recommendations have been followed by grape-growers in all parts of the world. He was a most voluminous writer; a bibliography of his writings, published by the Department of Agriculture, five years ago, showing over 15,000 titles.

Prof. Riley honored by his presence the North American convention which was held during the winter of 1892, '93, at Washington, D. C. At that time he read a paper which was listened to with marked attention and interest. In this he pointed out what the government had done and proposed to do for the bee-keeping interests of our country. Both he and Prof. Wiley, then Chief Chemist of the Department of Agriculture, created a pleasant and lasting impression on the bee-keepers who were fortunate enough to be in attendance upon that convention.

GOD'S LATEST GIFT TO A. I. ROOT AND WIFE.

ON the anniversary of their 34th wedding-day, at half-past nine on Sunday evening, Sept. 29, 1895, was born to their eldest daughter, Mrs. Maude Root Calvert, a little girl, giving them a granddaughter in addition to the grandsons, Howard and Leland. May God give grace and wisdom to both parents and grandparents to bring up the precious charge in wisdom's ways!



ON THE WHEEL, AMONG THE POTATO-GROWERS.

September 14 I opened my eyes in a pleasant little room in the home of my cousin, D. E. Fenn, of Tallmadge, O. The first thing was to get my drink of hot water. Then my cousin and I took a seat in his easy buggy (for he is somewhat of an invalid too), and we rode around his potato-field. Perhaps the soil in the vicinity of Tallmadge, Summit Co., O., is the ideal potato ground—a loam partly of clay, with just enough sand and gravel to make it just right after it has been supplied with humus and the requisite fertility. The field in question was, in the spring, a heavy growth of clover; but, clover seed being scarce, the seed sown was from some distant point; and all at once cousin Fenn became aware that a weed he knew by reputation years ago, but had not seen for some time, was coming up thick all through his clover, and just getting ready to blossom. The only way to rid the farm of it entirely was to turn it all deep under ground—clover, weeds, and all. Even the clover was just coming into bloom. His sturdy German hired man did the job complete, plowing deep, and then working the ground up till it was fine and mellow. I think it was late in June when the potatoes were planted—Monroe Seedlings and four barrels of the new Craig Seedling, the latter furnished by your humble servant. The potatoes were well cared for, and they were a sight to behold, especially when contrasted with the field of a neighbor over the fence who “farmed it” in the good old-fashioned way. And, by the way, there would not have been any bugs of any account on that field of about 20 acres had not this same neighbor kept supplying a reinforcement from his own field. The hired man had picked them off on the side of the potato-patch as fast as they got over and through the fence. While cousin Fenn’s Craig Seedlings are making a good show, they do not compare with the two acres at the Home of the Honey-bees. We got back just in time for my beefsteak. You see, I manage to find it when mealtime comes around, no matter where I am.

After breakfast the wheel and I lighted out for cousin Wilbur’s, a son of D. E. Fenn. He was milking the cows, so I talked with the children till he had finished. By the way, before I reached the house I climbed over the fence so as to walk through—no, I did not *walk* through, because it would have been too much work; but I rode my wheel alongside of the handsomest-looking field of potatoes I think I ever saw in my life. Now, hold on a bit. There was not a longer and stronger growth than on my own Craig Seedlings at home—no, not as much; but the foliage was all young, thrifty, and of that light, tender, dazzling green that reminds one of springtime. You will remember I told you that, on the 4th of July, I saw a hundred bushels of Monroe Seedlings piled up in his cellar, almost as hard and firm as they were when dug. Well, on the 5th of July he planted several acres of these potatoes. They came right up; and, as if realizing that time was precious, they just put in their best licks. The flea-beetles had gone, and there was not any neighbor near by who had potatoes the old-fashioned way, so there were not any Colorado bugs to bother them. Every leaf was clean and perfect—no perforations, no mutilation by insects of any sort. But the vines were knee-

high, and just about covered the ground; in fact, he had decided not to cultivate them any more, as the horses did so much damage tramping the vines.

“Cousin Wilbur, have you ever planted potatoes by the *acre* as late as this before?”

“Only once. Then I planted them the 6th of July instead of the 5th;* and I got them into the cellar all right, without injury from frost, other than that the tops were killed before they had done growing; but the potatoes kept over winter all the better, and kept through until July again all the better.”

He did not plant all of that 100 bushels, for good eating potatoes were scarce and high during the fore part of July, and he sold them for table use rather than plant them. His Craigs were planted much earlier, because they need a long season in which to reach maturity. His acre of Craigs looked about like his father’s.

I told the friends I must hurry off, as I expected to visit Terry, then Chamberlain, then go to Cleveland, call on my doctor, and reach home before night. My good friends thought it seemed almost incredible that I, a sick man, should undertake so much in a single day.

Ten miles or more on the wheel, and I ran right down into the lot where Terry himself was digging his Freemans with the potato-digger. Three men were picking them up; and his son was kept rather busy looking after the empty boxes, loading up the filled ones, and keeping the whole work going on without any hitch. I remembered my experience, given in the A B C of Potato Culture, in bothering a man when he is running a potato-digger, and a gang of men who were getting them up and moving them into the cellar at the same time. Terry’s potatoes were ripe, and the vines dead. You see, he works with a comparatively early potato like the Freeman, New Queen, and others, that he may get in wheat after the potatoes. There has been some complaint about the Freemans being small. They were not small on Terry’s ground, I can tell you, even though he has in his locality suffered from the drouth almost as badly as anybody. His potatoes were all of nice shape—clean and handsome. It was time for my hot water, and I begged to be allowed to go into the kitchen. A steaming tea-kettle stood right on the stove, and I was permitted to help myself. Friend Terry explained to his wife that I was on a hot-water “diet.”

“Why! But, Mr. Root, you don’t *live* on hot water and *nothing else*?”

“Oh, no! But I do live on hot water and beefsteak.”

“Well, we have plenty of hot water; but, dear me! where are we going to get beefsteak for your dinner, out here in the country?”

I laughingly explained to them my program for the day, and said that it was already time for me to be off. I rather expected that I should find them in the field, digging potatoes;

* After selling out all our potatoes I looked over our cellars and discovered a few odds and ends on the 12th day of July last. There was also about a peck of Craig Seedlings kept for possible tardy customers. A piece of ground where early peas had been taken off was selected, and potatoes planted on the 12th of July, and now the vines almost cover the ground. There certainly will be a tolerably fair crop. Years ago I used to try this late planting, and fail every time. I can not understand why Wilbur and I succeed just now unless it is because of the abundant fall rains and late warm weather we have been having for the last two or three years; or possibly we are learning how, and have got our ground in better shape for fall potatoes. But I tell you it is fun to see them growing, and making great tubers so rapidly during the cool pleasant days of the latter part of September.

and my half-hour's visit had abundantly satisfied me for making the trip. At just about my usual mealtime I stood before the landlord of the hotel at Hudson, O., and explained as follows:

"My good friend, I am under the doctor's care, and eat nothing but lean beefsteak. I am going to make you some trouble, but I am perfectly able and willing to pay you for it all. If you haven't it in the house, please get me from the meat-market a full pound of their best tenderloin steak. Have the butcher trim off every bit of fat, muscle, and bone, and pay him his price, then have it nicely broiled, not overdone, and call me to dinner. I shall probably be asleep on this lounge here in this sitting-room."

In less than an hour I was refreshed by sleep and an excellent meal of pure beef. When I went to pay my bill, the landlord said it was only 25 cts.

"Why, my good friend, 25 cts. won't pay for the meat I have eaten, let alone your time and bother."

"Well, our price is 25c. to everybody, and I don't see how we could charge you any more."

Now, friends, when you say the world is all bad, and when people make special strictures in regard to landlords and hotels, please remember there are exceptions. I had hard work to get this man to take more than the regular price, even after I had explained that I called for something outside of the regular line, and that I proposed in the commencement to pay extra for just what I wanted.

In a little time more the wheel landed me at the pretty home of W. I. Chamberlain, who carries on his farm as a sort of experiment station for the *Ohio Farmer*, of which he is one of the associate editors. He has about 36 acres in potatoes of different varieties. The field is so large I thought it quite convenient to take my wheel along while we made investigations. Besides he has a nice good wagon-road along by the side of it. We examined and tested more kinds than I can remember now. But the best of all, with his ground and his management, was the Sir William. It is a rather late potato, like the Craig and the Rural New-Yorker.

Perhaps I should mention that I found friend Chamberlain and his good wife at the dinner-table. As my time was so limited I was permitted to sit down to the table with them so we could talk meanwhile. They had the Sir Williams for dinner, and, of course, they were beauties. The way they cracked open and rolled out like popping corn, exhibiting their floury contents, was enough to make anybody's mouth water, let alone one who had not tasted a potato or any other vegetable for more than six weeks. Of course, the talk was about potatoes. In the midst of it, friend Chamberlain jumped up like a schoolboy and lugged in a basket containing some that were not used for the noonday meal. Something has given me a wonderful love for every thing in the line of potatoes during the past few weeks. Probably it is because I can not have any. But the doctor promises to reward me now before many weeks. Well, friend Chamberlain took along his spading-fork, and we dug into ever so many hills all over the field. The Sir William is certainly ahead of all others in yield. The potatoes were nearly all large—a large, long, white, handsome potato—almost no small ones at all. The Rural New-Yorker, that ran right along beside them, seems to come next to the Sir William.

Before I was half through, my watch reminded me that I should have to make time

and let the Rambler "ramble" indeed, or I could not reach my station, seven miles away, in time for the 2:10 train. The road was pretty fair; but as I neared Peninsula it was very much up hill and down. I imagined I could hear the whistle of the coming train; and we (the wheel and I) plunged down some fearful long steep hills in a way that reminded me of those of the Ozark Mountains a year ago. I reached the station, full of life and spirits, just a few minutes before the train. A brother-wheelman came close on my heels.

I reached the doctor's office in Cleveland just before the closing-time Saturday night. Several patients were ahead; but after we had become acquainted a little in the waiting-room, those who could, kindly gave way for me.

"Doctor, I think it a little ridiculous to call a man sick who can eat a pound of beefsteak three times a day, and ride twenty or thirty miles over the hilliest roads in Northern Ohio. Hadn't you better turn me off and let me go?"

After making some examinations he replied:

"Well, you are doing tiptop. You need not have any more *ground* meat unless you choose; but it seems to me that lean meat, and nothing else—that is, if you will be guided by me—is what you need just a little while longer. Yes, you are getting thin in flesh, that is true; but that won't do you any harm. If you should come down to 100 pounds, instead of your present 115, it would not hurt you a bit. It is not the number of pounds that a man weighs that counts, so much as it is the stuff he is made of, what there is of it."

I was at home Saturday night just a little after sundown, and not tired out either, from my big day's work. In fact, I had been so full of enjoyment that I felt more like having another trip just like it than any thing else. But I slept a solid hour and a half as soon as I had finished my supper. Pure, wholesome food, regular hours, pure water to drink, rest whenever it seems to be needed—are they not the three great essentials to life, health, and happiness?

FLORIDA TRAVELS.

From Lake Helen, on my return trip I passed back again through New Smyrna, clear around to Palatka, making a brief call on our good friend Aug. Leyvraz, at Francis postoffice. In this locality there has been rather a setback of late years. Land right around the station at Francis depot was worth \$50 an acre ten years ago; but at the time of my visit the whole tract had been sold to a party at \$6.00 an acre, and the proprietor was busy clearing up the ground, and planting Niagara grapes. One peculiarity of the way they do things in Florida—yes, and California too—is to launch out in a new enterprise by planting acres and vines by the thousand. I could not learn that anybody had made a success of Niagara grapes right in that locality; but in some places in Florida the Niagara grapes had been sent into northern markets out of season, and had brought 30 or 40 cents a pound. I should start a *quarter of an acre*; and if that succeeded I would increase the acreage, and so on, feeling my way as I enlarged. It may be urged that life is too short for this slow process; but I think life is too short to take so many chances, and shipwreck a man even before he owns any thing, comparatively.

Toward sundown on the same day I was landed in the beautiful town of Ocala; and, in fact, it is one of the handsomest and most business-like places I found in Florida. Just as I stepped off the train, a neat-looking schoolboy about twelve years of age (he attracted my at-

tention because he was about the age and height of Huber) accosted me very respectfully:

"Mister, would you like a place to stay over night?"

"Why, my young friend, that is just what I should like. Are you a runner for some hotel?"

"No, I am not a runner, but I can furnish you a nice bed for 25 cents."

"Are you sure the bed will be clean, and that there will be plenty of windows so I can have lots of fresh air for the low sum of 25 cts.?"

"I think the bed and the room will be all right, because my mother takes care of it. And if you should want a good supper for 25 cents, my pa will furnish it to you right over there."

I got a good supper, and I talked with the "pa" and the boy. The railway dining-stand kept by said "pa" was close to the depot, on expensive ground; but the home-like sleeping-room was off a little way where property was less valuable. Now, while so many people are saying (and a great many say it in Florida) that there is no way to make a living, I would commend the example of this father, mother, and child. While the father looks after the dining-room, his boy meets passengers as they step off the train; and the mother in the home, a little way off, provides pleasant, wholesome sleeping-rooms for the great traveling public.

There is a railway from Ocala to the renowned Silver Spring; but it runs trains only one trip a day, and I could not wait, so I chose the more expensive way of going over in a carriage. Just now I feel incompetent to do Silver Spring justice. Here is a spring that pours forth a volume of water sufficient, in one spot, to float a steamer; in fact, it forms the Ocklawaha River. You can stand on the platform at the side of the spring, and look down into the immense crater nearly a hundred feet. The water seems to have something supernatural about it. There is a dazzling crystal transparency that enables you to see even small objects perhaps plainer than you would in the air. A colored man took me in a boat, and pushed out so quietly that there was scarcely a ripple on the glassy surface. He named the different springs as we passed over them, while in breathless wonder I leaned over the boat with my face close to the water. Pretty soon he announced "Ladies' Pahlah," meaning that the enchanting picture in the depths below was named the "Ladies' Parlor." In the first place, there was a sparkling sandy bottom. This sand, owing to the deposition of chemicals, I suppose, glittered with all the colors of the rainbow. Then there were sea-mosses, and vegetation after the manner of beautiful ferns. This vegetation was also decked with rainbow hues. Some of it was like flaxen hair floating in the many currents of rushing waters as they poured forth from the dark depths opening here and there. Beautiful fish slowly and gracefully moved here and there through the avenues and luxuriant vegetation of this enchanted garden. It seemed to me as though I could stay there for hours; but the guide could not spend very much time for 25 cents—at least he thought so. I finally gave him an additional quarter to push up a little way along that wonderful river, down where two steamers come every day.

The trip by steamer from Palatka to Silver Spring, if I remember correctly, is about \$10. or \$6.00 one way. My ticket was already purchased, however, by rail, at a very much lower price, and so I did not take the river trip. The latter also occupied a great deal more time. A lady who came down in the boat said there was not much opportunity for sleep, because the boats were almost every minute crashing

through the tropical foliage along the river-banks. Of course, they might trim it off; but vegetation grows so fast under the stimulus of the sulphurous spring water that it would probably be a task to keep the whole river trimmed up.

After my colored guide had taken me back I understood that he slipped out of showing me one of the most important springs, even though I had given him double pay. Let me remind the managers of these pleasure-resorts that this sort of lazy trickery advertises their places adversely, more than thousands of printed circulars could boom them. Niagara Falls people will please take notice. Dishonesty and cheat do not pay anywhere. It is just as true now as it ever was, that honesty is the best policy.

Silver Spring and the Ocklawaha River are indeed a most beautiful sight, and an electric railway should by all manner of means run to Ocala and back again. Pulling great lumbering stage-coaches through the deep sand on a hot dusty road is a shame and disgrace to the present age.

One more visit, and my invitations to beekeepers were all finished. Frederic Adams, Green Cove Springs, is a migratory—not beekeeper, but tinsmith. He gives us another illustration of what a man may do to support and bring up a family if he has the grit. He has a complete tinsmith's outfit loaded into a wagon, and he goes twice a week all through the town of Green Cove Springs, soliciting orders. He is prepared to do any thing from mending a five-cent tin cup to putting a tin roof on a \$5000 hotel. When he gets a job of the latter kind, I presume he employs some help. I urged that he should have a shop in town. He has a running spring large enough to carry a water wheel and turning-lath. He goes out about his work at odd times, or a certain part of the week, then takes care of his grounds and home between times.

With the help of his son Frederic, and the assistance of the mayor, we finally alighted upon the father, with his wagon and tinner's tools. During my short stay we had a most agreeable visit, and drove up to the beautiful Magnolia Springs, where one of the great Florida hotels is located. Green Cove Springs is another of the beautiful springs in Florida. The water, however, is of a somewhat greenish tint. It is sulphur water, and too warm to be agreeable to most persons. But even after what I have said in regard to the enchanting beauty of these wonderful springs, scattered, it would seem, throughout almost all the United States by the hand of Providence, I want to say that Green Cove Spring in itself has a special claim above them all. It is right out in the open day—in a little park, as it were, in the midst of the town. The basin is perhaps 50 feet across. The depth may be 30 or 40 feet; and the whole bottom is literally paved with the whitest and most brilliant sand that Florida or any other clime ever produced. The water is of such sparkling clearness, and crystal brilliancy, that it brings forth an involuntary exclamation of delight from every visitor who first sets eyes upon it. I suppose my expressions were something like this: □ □

"Dear me! is it really possible that this is a reality and not an enchantment? Did you ever! Did anybody ever see or dream of any thing so enchantingly fascinating? These waters must surely be as beautiful and refreshing and invigorating to the taste as they are to the eye."

Then I sprang for one of the bright new tin dippers. Others were drinking the water, and I supposed it must be good, the way they smack-

ed their lips. It is really too bad to find fault, after all I have said; but the water was too warm to be refreshing; in fact, it tasted like the time-honored dishwater; and then I had just recovered from a fit of sickness, possibly caused by drinking from sulphur springs, and I knew it would not answer at all. I am told, however, that, like other sulphur waters, when exposed to the air, and then cooled with ice, it is very palatable. I never thought, at the time, to try any of the Florida waters after boiling. As I write, however, I feel pretty sure I could drink them hot after a sufficient lapse of time after my regular meals.

Before I bade friend Adams good-bye I had quite a little confidential talk with him; and his closing remarks still come up in my memory together with the memory of that beautiful Green Cove Spring, only more refreshing. As nearly I can remember, he said something like this:

"Mr. Root, I especially wished to have you make me a visit. I am not much of a bee-keeper now. In fact, I do not take GLEANINGS because of what it has to say on bee culture. There is something else that interests me. For many long years I have been in the habit of reading my Bible more or less every day. For a good many years I did it from a sense of duty, and not because I was particularly interested in it. I want to tell you now, however, that, for several years back, the Bible has been growing more precious to me every day. Now it is a *joy* and *pleasure* to make it my daily reading. I love it because I believe it is God's message to his children, and I am trying to bring up my motherless boy and girl in the fear of the Lord."

As he gave my hand a parting pressure and wished me Godspeed, I recalled to mind that, during the afternoon, when we were hunting for the father, I had enjoyed having a very earnest talk with the younger Frederic; and he almost gave me his promise to commence then and there, from that day forward, to seek the kingdom of God, and his righteousness. May God's blessing, and may the Holy Spirit, finish the work that I in weakness had only just begun.

OUR HOMES.

And he shall turn the heart of the fathers to the children, and the heart of the children to their fathers.—MALACHI 4:6.

'ALMOST A MAN.

□ A few days ago I was much moved by reading a little book by Dr. Mary Wood Allen, entitled, "Almost a Man." Its line of thought was a little different from the one I am going to talk about to-day; but still it set me to thinking of the boys around us and in our homes, who are *almost* men, and of the girls who are *almost* women. It set me to thinking that a good many times even their own fathers and mothers hardly realize that the children are children no longer, but almost men and women. It was only yesterday, in the busy part of the day, when letters were being passed about the office from one to the other, that the following touching appeal was all at once held before my face:

Dear Brother Root:—While I was at the State Fair my son, X. Y. Z., ran away in a most unfortunate manner. I send you the letter he left. As a truthful explanation of our relations, he never took any interest in our business; had learned to drink, use tobacco, and gamble, and I could not help keeping up a never-ceasing protest. He has many good qualities, and I can not abandon him.

I want him to return at once to his duty. Write to him, and help me save my darling son. A. B. C.

I read it over; and I hope that the dear friend whose name appears at the bottom will forgive me for deciding, before I had gone further, that he was at least *somewhat* to blame. Before discussing this further, however, let us consider the letter inclosed with the above:

Father:—I am about to do something that I dread the worst of any thing I ever attempted. I can not keep the tears back when I think of leaving the dear old home; but I am afraid we are so poorly calculated to live together, that it is not advisable for us to try it any further. I do not blame you altogether. I know I have often done wrong myself; and we both being wrong is what caused the trouble. I do not despise you now (as you may think); I wish you the greatest possible success, and hope you may get yourself into circumstances where you will be a great deal happier than you ever were with me.

I may have done wrong in taking as much with me as I did; but it seems to me as though I deserve some consideration, as I do not expect to get any thing after I leave this time. I fully appreciate what you say about the chance a person has who goes out in the world alone now, and I should think you would be willing for me to have something for a little start at least. I intend to go out to work, and save my money and hunt up a good location, and get into bees as soon as possible.

I do not like the *cowardly* way I have taken in getting away. It makes me sick when I think of it, and I am *very* sorry now I ever did it this way; but it is too late now. Somehow I thought it was the only way.

Father, I will tell you where the key to our trouble is. It is in the fact of my being of a *naturally unsociable nature*; but I don't think I am to blame for that. I think if I am out among people, and on my own resources, it will benefit me in that line. The reason I am not going to bid the folks good-by is because I know that, at the word, I should lose all control of myself. It is bad enough to leave the way I will, to think of leaving all the neighbors and friends. I have to grit my teeth and turn the subject from my mind. I do not expect to have half what I have been used to having here; but what I am after is more agreeable personal surroundings. I know that, under the circumstances, as we have been living I would ruin all chances for myself, and do no good for you or any one else, and at the same time spoil my health and whatever good nature I do have.

I do not want to drop you now altogether. I should like very much to hear from you often, for I know your intentions are the *very best*. When I get where I am going I will write to you the first thing. Repeating the wish that you may be happy and successful in all your undertakings,

I am your son,
X. Y. Z.

P. S.—I took just seven cases of honey.

Both of the above letters are exceedingly touching. Indeed, they will bring tears to many a parent's eyes, and perhaps also to the eyes of many a son or daughter. I do not know the boy's age; but whatever the age may be, I suppose he is at that critical period that I spoke of—almost a man.

When I was about 17 years old I was bashful and timid. I did not know how to act, and was afraid of society; but all at once there came a reaction. Something new seemed growing within me, and I, like friend X. Y. Z., felt as if it would do me good to get out into the world. While I still maintain that there is no friend to be found like the father and mother, I am at the same time forced to the conclusion that it oftentimes does a boy good—yes, and his father good too, but oftener the father than the mother—to let him go away from home awhile. My father and I were very much unlike—at least, when I was 17. In fact, our tastes ran in such different channels we were not very much "in touch." Mother, however, was a sort of bridge between us two. I longed for some expressions in regard to the mother in

both of the above letters. May be God has taken the mother away. If so, may the dear Savior come between that father and son, and cast out Satan, for it is all Satan's work, and both father and son are surely to be pitied.

Well, when I was 17 I had formed my project of going away from home. I was helping father one Saturday afternoon, drawing corn-fodder. Now, in those times I did not like corn-fodder, nor horses nor pigs nor cattle, nor muddy corn-fields. But I worked pretty well that day. With much fear and trembling I told my father what I wanted to do. Perhaps we had talked it over in a general way somewhat before. I told him my plans, and that I wanted a five-dollar bill to complete my outfit. I wanted it that very day. He was silent for quite a spell. Finally he stopped his work; his face softened into a smile, and he took out the old familiar leathern pocketbook. Oh how much good it did me to see that smile! I knew how scarce five-dollar bills were, and I knew how he needed them to prepare for winter, for my parents were comparatively poor in those days. He surprised me somewhat by handing me the money so readily, and made some pleasant remark to the effect that, if my plan ended in failure, I would learn something by experience any way. Yes, I did. I got out of money, and was sick at a hotel. But I was too proud to write home, so I worked and got some money, sent back to the hotel for my things, and six months afterward I came home on a visit. Oh what a delightful day that was! I was a little better dressed than when I went away; and, at least in my own estimation, I was ever so much more of a man. The six months away from home had been a grand school to me. I had learned something of the wickedness of the world; but the thought of the home, the mother, the father, and sisters, had held me pretty well from the evils I met. Did my father do a wise thing in helping me to go off when he needed me greatly at home? I think he did. Most of the time I was not far away from my older sisters. But I was loose and free, and had a tussle in making my way through the great selfish world, as some people call it.

I am afraid, dear friend A. B. C., that you have not taken just the best plan with your boy. Please do not feel hard if I suggest that you two have not been in touch as you might have been. I know it is pretty hard to hold a parent responsible for the sudden turns that a boy in his teens may take; but above all things I think a father should be careful to see that there is harmony between him and his boy. Never mind the honey he took. Do not question whether he had fairly earned it or not. Tell him it is all right, and do anything or sacrifice almost any thing to still preserve friendly relations. A man should never quarrel with his wife. He should not talk about her to the neighbors. He should be ashamed to mention her faults to any living being. Now, I think it should be pretty much the same with his boy. If your boy is bad, do not tell it to *anybody*, unless it is to go to the great God above and tell him your troubles as you pray for your boy. Has not the boy got it pretty nearly right when he says you two are poorly calculated to live together—that is, such *has* been the case? Now forgive me, dear friend, for saying that such need be the case no longer. There is a way by which we may be changed over, and become different. "Ye must be born again," so the Savior said. The love of Jesus Christ can so baptize us over anew that we shall be no longer the same we were before. I wish I could feel, dear father,

that you were praying for that boy, and that that boy could be moved to remember you in his prayers, for I believe that even a boy prays sometimes, for even a boy at times has thoughts and feelings that God accepts as a prayer. When you two are praying for each other, how quick will the new relations come!—the harmony, the peace, the loving confidence, that should always exist between father and son!

Now, dear readers, please do not imagine that I am such a model father as I am holding up to you. My conscience accuses me while I write. But, may God be praised, I can, right in my own home, find an illustration of what I am trying to teach.

These September days have been very warm—yes, and the nights have been warm too. Mrs. Root has much trouble in sleeping during sultry nights. With the opening of school and the approach of house-cleaning time, and other things I need not mention, many cares have come upon her. She has been greatly wearied of late. When I rush over from business for my ground meat or hot water, I find her flying about from one thing to another with a speed and untiring zeal that is often a rebuke to me. She is tolling for those she loves. You suggest hired help. There is work to be done in a household that nobody can be hired to do. It was at the close of one of the hottest days. I knew that she was tired out, and that she had slept but very little the night before. Her duties were almost ended; but a restless youth, "almost a man," burst in with his boyish enthusiasm, and wanted something of mamma. I was going to utter a protest; but they got off together in another room. I peeped in to remonstrate against it; but they seemed so busy, and in such perfect harmony in their plans and work, that I forebore scolding until I could look on a little. I had once or twice been inquisitive in regard to this new hobby of that "young Root;" but neither mamma nor Huber seemed inclined to enlighten me. I had faith in them both, however, to trust them and not insist. Now, what do you think they were up to? Why, mamma, tired out as she was, was fashioning some sort of great thick mitten, padded on the palm, so the wearer could catch a baseball, no matter how hard or how swift it was thrown, and not hurt his hand. It had to be just exactly so to please the boy, and nobody but mother could do it. It was pretty late bedtime when the thing was finished. Why should I mention this trifling circumstance—something so natural and so common in almost every household? Because, dear parents and dear children, it illustrates the point I am trying to make. That boy and that mother have always been a *unit*. She has stood by him from his boyhood up; and I verily that, boy as he is, he would stand by his mother through *fire and flood*. Yes, I think the bond is so perfect that all the arts of the evil one—that all the machinery of vice and dissipation could never entice away that boy—at least, while his mother is living to hold up a warning hand. That same boy loves his father, and his father loves him; but the bond of sympathy is not like that between the boy and the mother. I fear the father has never yet reached the point where he would make the sacrifice that the mother does, that he might be in touch with the child. Had he come to me when I was tired out and unfolded to me his plans for something about base-ball, I fear I should have said that base-ball does not amount to very much any way, and that it was time for us all to go to bed. I fear I should not have been willing to get down on the floor by that boy's side, and

win a place in his heart that would hold stronger than massive cables or iron chains—a bond of sympathy that would hold him secure when Satan commences, as he will a little later, just as that boy begins to feel the throbbings of manhood and ambition through his boyish frame. May the dear Savior bless these words and make them plain to the fathers and mothers and the children. Excuse me for just one more illustration in this very line.

There is also in our household, thank God, one who is "almost a woman." Her studies were interrupted a year or two ago in consequence of overtaxing her eyes. She must drop her education for the time being, or somebody must be eyes for her. Different members of the family took their turn; her relatives lent a strong helping hand; but sooner or later success or failure depended on the *mother's* assistance. The mother did not, in her girlhood, have the advantages that most of us do now; but through long years, oftentimes as I close my eyes in sleep at night, I have listened to the reading and the recitations from the schoolbooks; and history, physiology, and even Latin have been gone over; and the mother has surprised me again and again by giving me facts gleaned from schoolbooks, that I knew nothing about. We thought it a pretty hard dispensation of Providence when physicians declared our daughter must not use her eyes to read; but the mother's life has been refreshed and broadened by her school studies, even after she was fifty years of age. I mention this for the encouragement of other mothers. A man, or woman either, can commence and successfully master every branch of study taught in our common schools, *after they are fifty years old, if they only have the will to do it.*

I have been told the English people are clan-nish—that they hang together; that the different members of the family will stand up for each other. From my experience with one daughter of "Merrie England" I half believe this to be true. May God grant that it is true; and may England's sons and daughters both teach us Yankees wholesome lessons to the extent of being clan-nish enough to make the family circle hold together.

Now a word to this boy. Dear young friend, let me whisper to you to bear with your father, if need be. Do not have trouble with him if it be a possible thing. Write kind and friendly letters to him often. Make him a visit now and then, no matter what it costs you. Keep up and preserve friendly relations. Read that grand old story about the prodigal son; read it again and again. And, oh if I could only hope, dear boy, that my poor efforts during this pleasant afternoon could have the effect of calling your attention toward that precious book, the word of God, how happy I should be! Very likely I shall meet your father before many years. Perhaps I may see you too. Would it be hoping for too much to believe that I might some day hear you tell me you have given up tobacco, strong drink, and games of chance for ever? May be your father is a little mistaken about these things. Won't you set to work to convince him he is wrong? You speak about being naturally unsociable. Why, my dear friend, that is one of my failings, if I don't guard against it and look out for the tempter. Won't you write briefly and tell me that I am at least pretty nearly right about it?

HOWARD H. RUSSELL'S TEMPERANCE WORK IN OHIO.

Some years ago our pastor, in his opening prayer one Sunday morning, took occasion to

thank the Lord for our enemies, for they tell us of our faults. Well, now, it seems the enemies of temperance are doing a still greater service in the State of Ohio. They are advertising the Anti-saloon League. At a meeting of the Ohio State Liquor League, recently held in Springfield, O., the president, in his address, made the following speech, which we copy from the *Cleveland Plain Dealer*:

"Few of you are fully aware of the powerful organization that has been effected throughout the State by Rev. Howard Russell, devoted entirely to this view of your business. He was our most bitter enemy in the Ohio legislature two years ago. He, with his aids, came near pushing legislation through the House of Representatives that would have meant death to the liquor-traffic. Since then he has tripped the strength of the Anti-saloon League.

"We are in a position to wipe the liquor-traffic entirely out this winter," are Russell's own words. Rev. Mr. Russell says the time for organization is not when the legislature is in session, but when it is not in session, and be in position to make a powerful front when it does convene. These are my sentiments exactly; and the Ohio State Liquor League has used every effort to do likewise; but, gentlemen, we have abundance of room for improvement, which I am afraid you will learn before this time next year.

"I have been through the mill, and will predict that, unless the liquor-men, who have millions of dollars invested, come closer together, become more thoroughly organized, discard all petty jealousies, and work as a unit, there will be legislation railroaded through the coming legislature that will wipe 75 per cent of the liquor-dealers entirely out of the business."



WHITTAKER OR MULTIPLIER ONIONS, FOR FALL PLANTING.

I have had 25 years' experience in planting these same onions in the fall. No, it is not too late. I always tell my audience, when talking on "revised edition" gardening, to plant a bed of Whittaker onions the time that farmers are sowing the first wheat; but I planted earlier this year than ever (Sept. 13), for the reason that it is so exceedingly dry here; and when it comes wet we may be detained. If your ground is not very mellow, incorporate wood ashes; for the greatest trouble you will likely have will be that your ground will *get hard* by spring. Guard this point. I have quit mulching in winter, but it is advantageous; but don't mulch heavy. A little corn-fodder is good; but old tomato-vines are best—they don't fit down to the surface so close, and the onions grow up among the vines. Brush are good if they are just the kind—any thing to prevent the ground from freezing and thawing, for it has a tendency to raise the big bulbs out of the ground. Plant a little deep, and hoe the crop as soon as they start to grow. I have had them start very little in the fall, and still make an excellent crop. I have, when times were better, planted a good large onion, such as I will send you, and in the spring I pulled 18 onions from the one, and sold them at 10 cts.; but now times demand a nickel bunch, and we put in a dozen for a nickel. They are the best-selling vegetable I ever grew. In the spring we get southern onions here, three in a bunch, for a nickel; but a week or two later, when we begin with our nice fresh onions, the southern onion stops quick.

What may be called a "trick of the trade" is

to plant some smaller onions (same variety), only about the size of a guinea egg. These make three or four new onions only, but of course they are larger; but these are nice too; or, as the Irishman says, to "imbellish" the bunch. I will put in a few of the medium-sized ones, so you can try which you like best; but the medium take up room too fast, and don't turn out fast enough. I find nothing pays me better in gardening than to plant onions in the fall, and have them in market in April.

They are valuable, because, if onions are plentiful (*large* ones in particular), and dull sale, or if they start to grow, as onions sometimes do in warm winters, all you have to do is to plant them, no matter if they have grown 4 or 5 inches. The result of your planting will be a lot of small onions that are often valuable; if not valuable, plant again and get large ones. I do this; and unless I can get 10 cts. per quart I plant; and 10 cts. per quart means about 20 cts., because they are larger than sets usually are, and fill up twice as fast.

But this variety is valuable for another reason: They, as a rule, do not sprout nearly as readily as other onions, and are wonderfully dormant until in the *late* spring. Just last spring, onion-sets were 5 cts. per quart here; and, owing to their keeping quality, I was able to sell mine at 10 cts. Now, the large ones appear to sprout much more readily than the small ones. They should also be called *early*, because they come in a shorter time than other varieties of onions do if planted in spring.

Last spring I bought a bushel of these onions brought to one of the groceries by a Mrs. Taylor. They were not large, either. I planted them in very rich ground alone, to test the result of the investment. Before pulling-time I noticed from 5 to 7 onions or a bunch like the one I sent you by mail, apparently lying loose on the bunch of larger ones, the large ones yet green, and the small bunch ripe and ready to pick up, as they were loose, and lay unattached. I took over a bushel of small ones, worth three to four dollars; and when the rest were ready to harvest I had over four bushels of larger ones than I planted.

DR. F. M. MARTIN.

Mercersburg, Pa., Sept. 17.

The onions sent by friend Martin are remarkably solid and handsome. They look almost like the White Multiplier, but are of a bluish color. And, by the way, what is the real difference between Potato onions and White Multiplier onions, except that the Multiplier is white, and the Potato onions are straw color, or sometimes like what friend Martin calls the Whittaker onion? At \$2.50 per barrel, the price we paid him for these, we think there should be a large trade in them, if they are good keepers; and the larger ones are nice enough for anybody. His remarks in regard to the right kind of mulch agree with my experience exactly. Onions won't stand any thing that settles down flat and close, like stable manure, or even rotted straw. Old tomato-vines, and I should think bean-vines, where the beans have been thrashed out; evergreen boughs, or any thing that will stand up loose, letting in plenty of air, and yet proving a partial shade, is just about what we want for onions and a good many other plants that are almost winter-proof.

GAULT RASPBERRIES AND CRAIG SEEDLING POTATOES.

The Gault raspberry-plant you sent me was planted on the 30th of April. By the 1st of Aug. it had put out 20 canes, measuring in all 54

feet. Two other canes now have bloom and berries on.

The Craig seedling potatoes you sent me arrived at the postoffice on the coldest Sunday of last winter, and were not taken out until Monday. They were frozen, all but six ounces. I now have 16 hills of the plants, and 60 side-shoot hills.

Garden City, Mo., Aug. 6.

G. J. YODER.

HUMBUGS AND SWINDLES.

ELECTROPOISE.

The latest circular sent out by the Electropoise people has on the outside of it, in large plain type, so as to attract attention, "Ministers of the Gospel." On looking closer you will see it reads "what ministers of the gospel say about it." Turning over the leaf we read the following:

The Electropoise is able to cure all diseases, no matter how various in character, because all diseases can be traced to one and the same source—weakness.

Now, these people have a good many times declared very positively that they never claimed it would cure *every* thing. How does the above sound? After my remarks on page 536 I sent for the instrument that was used at the time of the patient's death. It is one of the latest make, and I suppose it includes all the recent improvements (?). I used it faithfully according to directions, off and on, for more than two weeks, without being able to perceive any effect whatever. Mrs. Root has always been troubled for lack of sleep during hot weather. She also used the instrument according to directions; but instead of inducing sleep it kept her awake. She said the very idea of having something hitched to her ankle, and connected to a block of ice, was enough to keep a nervous person awake. Accompanying each instrument is a very pretty little book—leather-bound, gilt-edge, labeled on the outside, "Plain Directions for using the Electropoise." On page 8 we read:

Research and experiment through many years have shown that hydrogen and other electrically *positive* gases contained in the atmosphere, by their absorption, and passage through the skin and underlying tissues, in undue proportion, become the foundation of all the physical disturbances we call disease.

Now, will these ministers of the gospel, who are assisting to push Electropoise, please calmly consider the above statement? In the first place, hydrogen is not a component part of the atmosphere at all. It is found in water, but never in air. The expression, "electrically positive gases," does not mean any thing at all. There is no sense to it whatever; the same with the talk about "absorption," and "passage through the skin," etc. It is just jargon, humbug, and nonsense; and so on with the whole contents of the little book of 284 pages. It is really appalling to think any man of sense and judgment, or one who has any education at all, could be induced to fill a whole book with silly nonsense and unmeaning terms. Let me quote once more, from page 12:

It generates no current which is discoverable to the sensation of the patient.

The proprietors of the concern actually come out and declare that it produces no sensation perceptible to the patient at all. Therefore this thing without *sense, science, or sensation*, is what they are selling for \$25.00, and ministers of the gospel are helping on the work. Publishers of religious papers keep inserting

their advertisements, and unblushingly declare they are going to keep on doing so, with the above facts staring them in the face. I paid our friends who were swindled, \$5.00 for their \$25.00 instrument. If anybody else wants it for \$2.50 (is not this quite a jump, from \$25.00 down to \$2.50?) I shall be glad to sell out, book of instructions and all. If nobody can be found who has faith enough in it to give \$2.50 for a \$25.00 machine, then we will come down on the price still more. I tried to get some of the younger Roots to give it a test; but they simply laughed at their worthy parents for the pains they had taken to be sure there was no mistake about the thing.

Science Stiftings, London, has taken up the matter of exposing Electropoise, for it seems they are already trying to push it across the water. They justly term it the "quack toy." We make one brief extract:

The Electropoise is an impudent and cruel fraud; and its very active proprietors are unblushing knaves who have conceived the notion of flooding our newspapers with fraudulent advertisements and raiding the attenuated pockets of our afflicted poor.

Special Notices.

We have a number of mismated Italian queens at 35 cents.

SEED POTATOES FOR FALL SHIPMENT.

Since prices given in our last issue, page 689, there has been some decline in the market. For instance, Beauty of Hebron will be as given in our last—peck, 15 cts.; barrel (11 pecks), \$1.50. New Queen, Freeman, Burpee's Extra Early, 1 lb. by mail, postpaid, 15 cts.; 3 lbs., 35 cts.; peck, by freight or express, 35 cts.; bushel, \$1.00; 2 bushels, \$1.75; barrel of 11 pecks, \$2.50. Craig Seedling at prices given in our last issue, page 689. The Craigs are still growing as if their lives depended on it, no frost having interrupted them up to this date, September 30.

SIR WILLIAM POTATOES.

On page 689 of our last issue, a lower quotation on Sir William potatoes was made than the market-price will warrant. It was a misunderstanding on my part—or, perhaps, a blunder of mine. Accordingly, that quotation on the Sir William is withdrawn. The following is, for the present, to be the price, and no orders accepted for less than a barrel:

Barrel, \$3.50; 5 barrels, \$16.25; 10 barrels, \$30.00. All will be shipped in October and November, in new full-sized apple-barrels, free on board cars at Hudson.

The potatoes will be of the crop grown by Mr. Chamberlain himself, the same as I described in our present issue, and are guaranteed to be true to name, pure from mixture, and averaging large size, with none below good planting size. They will be packed and shipped by Mr. Chamberlain.

JUTE SACKS FOR HANDLING AND SHIPPING POTATOES.

Of course, the potato-boxes are, all things considered, about the neatest and handiest thing ever gotten up, for handling or storing potatoes; but with the immense crop and low prices of this present season it is very often desirable to use sacks; and we have had potatoes shipped in sacks that came to us in very good order. The expense of transporting sacks is, of course, very much less than with boxes. After some investigation we have succeeded in finding a very strong, substantial jute bag, holding two bushels each, suitable for potatoes, grain, or almost any purpose that bags are ever used for, which we can supply at the following low prices: 10 cts. each; 90 cts. for 10; \$8.00 per 100; \$75.00 per 1000. A bag of the same material, holding only one bushel, 5c each; 45c for 10; \$4.25 per 100. If you would

like to see such a bag before purchasing, we can mail you a sample of either, at a cost for postage of 7 and 16c respectively.

GARDENING FOR OCTOBER.

Most of the gardening done now will be to save the crops from frost, and to make the most of every thing. Do not be discouraged, even if prices are low; but get every thing out of the way of freezing. Gather the beans as soon as dry enough; and if a frost threatens, do not wait for them to get dry, but get them into an open shed; spread them out where they will not heat, and many of them will ripen up nice. Fruit and even forest trees may be planted in the fall; and, when properly done, I believe there is an advantage in it. Look out for stuff, however, that is liable to be thrown out by the frost. If you have had experience, and know how to do it, you can succeed; but if you are new at the business, go slow until you learn the trade. Do not forget to hoe and cultivate cabbage and cauliflower that are not yet headed up. Now is the time to raise the finest cauliflower of the season; also look after the spinach and potato onions, and others that are to be wintered outdoors. You can keep strawberries growing right along until Christmas, if the ground does not freeze.

DRUMMOND'S ADDRESSES, ETC.

Most people have read or heard more or less of Henry Drummond's stirring, and, we might say, startling, exhortations to righteousness and right-doing. In fact, his one address, "The Greatest Thing in the World," had such a run that it was sold by newsboys on the cars, even though the price was kept up for a time to 25 and even 50 cts. a copy. When I first read it I made some mention of it in our Home Papers. But I protested at the outset against charging such a price for a pamphlet of 30 or 40 pages. We have succeeded, however, by purchasing 500 copies outright, in getting them so we can send them by mail for only 10 cts. each. Now, if you have never read "The Greatest Thing in the World" you certainly want this little pamphlet. It is handsomely gotten up, in paper covers, and contains 52 pages, and will probably be read by almost any one who picks it up and commences to read it, even if it is a sort of sermon; and it will bear reading again and again. I am so anxious to see it find a place on the reading-table of every home that I would almost send it free of charge if that were the right and proper thing to do; and we will, anyhow, do this: Every subscriber who sends us \$1.00 for GLEANINGS for one year, and in the same letter says he would like "The Greatest Thing in the World" as a premium for subscribing early, can have it free of charge.

Now, some of you may prefer to pay a little more, and have a neatly bound book—one that would be handsome enough to place on your center-table. Such a book is published, neatly bound in cloth, at the price of 75 cts. It contains not only the address, "The Greatest Thing in the World," but a brief sketch of Prof. Henry Drummond, and five other addresses, with an engraving of the author. It is a book of 137 pages, and the price, as I have told you, is 75 cts. by mail; but by buying a large number of copies we are enabled to furnish it for only 25 cents, if ordered with other goods, or 30 cents by mail. If you want something for a Christmas present, I do not know of a book in the world that will answer any better. Prof. Drummond is clear up to the front in all modern science and theology; and all mankind, no matter what their belief, seem to be united in acknowledging that he has done a great work in making the religion of Christ Jesus plain, sensible, and practicable. You need not be afraid of dry theology. Every page of his writings is alive, and up to the present time and present wants and needs. Perhaps you had better get the little ten-cent book first, and see if you do not agree with me, and want the larger one. We will send the larger book to any person, a subscriber, who keeps up his own subscription, and sends us one new name along with his subscription.

To close out before uniting nuclei I will mail 1 untested queen for 50c. Order at once. Plenty nice queens on hand.

W. H. LAWS, Lavaca, Ark.

Daughters of Imported Italian Queen.

One for 50c; 3 for \$1.25; 6 for \$2.25; 12 for \$4.00. Safe arrival and satisfaction guaranteed. References: E. A. Sheldon, L. C. Tift, Independence, Ia.

Albert Hines, Independence, Ia.

For \$350.00. One hundred 2-story hives complete for comb honey; bees and hives in good order. Inquire of **A. LEYVRAZ, Francis, Fla.**

Alfalfa Clover Seed. 1 to 4 lbs., 25c per lb.; postage, 8c per pound extra. Bushel, \$8.00. Sample, postpaid, 25c. **A. H. DUFF, Larned, Kan.**

PATENT WIRED COMB FOUNDATION

Has No Sag in Brood-frames.



Thin Flat-Bottom Foundation

Has no Fishbone in the Surplus Honey.

Being the cleanest, it is usually worked the quickest of any foundation made.

J. VAN DEUSEN & SONS,

12tfdb Sole Manufacturers,
Sprout Brook, Montgomery Co., N. Y.

Promptness is What Counts.

Honey-jars, Shipping-cases, and every thing that bee-keepers use. **Root's Goods at Root's Prices, and the Best Shipping-point in the Country.** Dealers in Honey and Beeswax. Catalog free.



WALTER S. POWDER,

162 Massachusetts Ave., Indianapolis, Ind.

IF YOU WANT BEES

That will just "roll" in the honey, try **Moore's Strain of Italians**, the result of 16 years' careful breeding.

Dr. H. B. Lung, Harrodsburg, Ky., says: "I have had the pleasure of seeing many fine strains of bees, yet I have never seen such industrious, energetic bees. I must express my admiration for your success as a bee-propagator."

Reduced Prices: Warranted queens, 70c; 3 for \$1.95; 1 doz., \$7.00. Untested, 60c; 10 or more, 50c each. Select Warranted, 90c; Select Untested, 80c; Tested, \$1.00. Select Tested Breeders, \$1.50 each.

Those who have never dealt with me, I refer to A. I. Root, who has purchased of me 808 queens. Circular free.

J. P. MOORE, Morgan, Pendleton Co., Ky.

☞ In responding to this advertisement mention GLEANINGS

BEGINNERS.

Beginners should have a copy of the **Amateur Bee-keeper**, a 70-page book by Prof. J. W. Rouse. Price 25 cents; if sent by mail, 28c. The little book and the **Progressive Bee-keeper** (a live progressive 28-page monthly journal) one year, 65c. Address any first-class dealer, or

LEAHY MFG. CO., HIGGINSVILLE, MO.

Queens, Either 3 or 5 Banded.

60c each; 6 for \$3.25. These low prices are to induce you to try them. Catalog free.

CHAS. H. THIES, Steeleville, Ill.

TAKE NOTICE!

BEFORE placing your orders for **SUPPLIES**, write for prices on **One-Piece Basswood Sections**, **Bee Hives**, **Shipping-Crates**, **Frames**, **Foundation**, **Smokers**, etc.

PAGE & LYON MFG. CO.,

Stfdb

New London, Wis.
Please mention GLEANINGS.

21-8db

HATCH CHICKENS BY STEAM—

With the **MODEL**
Excelsior Incubator.

Simple, Perfect, Self-Regulating. Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class Hatcher made. **GEO. H. STAHL,**
114 to 122 S. 6th St., Quincy, Ill.

Circulars free. Send 6c. for illus. Catalogue.

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BLACK MINORCAS.

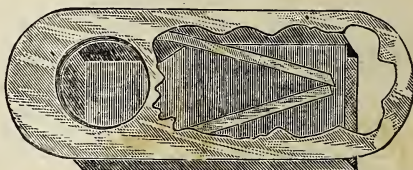
I have a choice lot of fine cockerels for \$1.00 each; trio for \$2.00. If birds are not satisfactory they may be returned at my expense, and I will refund the full amount paid.

CHAS. BIERY, Novi, Mich.

62 Colonies of Pure Italian Bees for sale cheap. In 8-frame Langstroth hives. Must be sold on account of removal.

F. J. GUNZEL, Claytonville, Ill.

Advantages of Bee-Escapes.



No sweat steals down the heated cheeks and aching back of the bee-keeper as the result of standing in the hot sun puffing, blowing, smoking, and brushing bees; no time is wasted in these disagreeable operations; and no stings received in resentment of such treatment; the honey is secured free from black or even the taint of smoke; the cappings are not injured by the gnawings of bees; and robbers stand no show whatever. If there are any broken burr-combs they are cleaned up by the bees *inside* the hive, before the honey is removed. **Leading Bee-keepers use the Porter Escape**, and say that without a trial it is impossible to realize the amount of vexatious, annoying, disagreeable work that it saves. The cost is only 20 cts. each, or \$2.25 per doz. As in the past, this escape is manufactured by the Porters, but The A. I. Root Co. has secured control of the sale for this country. Order of your dealer or of

THE A. I. ROOT CO., Medina, Ohio.

"The Southland Queen."

Send \$1.00 for the **Southland Queen**. Edited by the **Atchley family**. Plain, practical, and all fresh bee matter. **Jennie Atchley** is now conducting a bee-keeping school, that began in the June number. You can get back numbers.

A steam bee-hive factory; Root's goods; Dadant's foundation.

We have a fine lot of tested and untested queens for fall trade: Tested, \$1.50 each; untested, 75 cts. each, \$4.25 for six, or \$8.00 per dozen. Send for free catalog that tells all about queen-rearing, and sample journal.

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co., Texas.

W. O. Victor, of Wharton, Tex., took

45,000 Lbs. of Honey in 1894.

He offers **Italian Queens**—good, old-style honey-queens—untested, first order, to any address, at 50c each. Also bees in any quantity; 450 colonies to draw from. **Root's goods constantly in stock.** Prices to suit the times. Buy near home, and save freight.

Oct 15 1.25 # 20

GLEANINGS

A JOURNAL
DEVOTED
TO BEES
AND HONEY
AND HOME
INTERESTS.

BEE CULTURE

ILLUSTRATED
SEMI-MONTHLY
Published by THE A. ROOT CO.
\$1.00 PER YEAR MEDINA, OHIO

Vol. XXIII.

OCT. 15, 1895.

No. 20.

STRAY STRAWS

FROM DR. C. C. MILLER.

ABOUT THIS TIME we begin to whistle up our courage by telling how bright the prospect is for next year.

THE HUNGARIAN government in ten years has appropriated nearly \$40,000 for the advancement of bee culture. In seven years the products have doubled.

THE FIRST FROST here came Sept. 28—a hard freeze. Oct. 3 the bees are at work on sweet clover and on the few blossoms yet to be found on spring-sown crimson clover.

THE *Bienen-Vater* contains an account of bees carrying in the resinous little leaves from the buds of poplars and horse-chestnuts, carrying them with their jaws, evidently to be used as propolis.

A DRONE, we have always been taught, takes 24 days to develop from the egg; but H. W. Brice says, in *British Bee Journal*, that, after much and careful observation, he is sure it requires 25 days.

DECIDEDLY, I don't believe in many and long essays at conventions; but if every one was as meaty and discussion-provoking as that of B. Taylor at Toronto I don't know but I might change my views.

THE FOUL-BROOD bacillus, under favorable circumstances, increases by division about once every half hour, so that in 10 hours a single bacillus increases to a million! If you doubt that, figure it up for yourself.

GRAVENHORST has been wrestling with the conundrum, "Why do bees sometimes get nothing from clover when in full-bloom?" and got the worst of it. A young fellow like him had better fool with something easier.

IF BEESWAX from foul-broody colonies is used for making foundation before it is carefully cleansed, the spores remain in the wax, and no one then denies that foul brood may be conveyed thereby.—*Neuman, in Centralblatt.*

So far as my own observation is concerned, I agree with him that queens will pass readily from one story to another, the trouble I reported about getting a queen to lay in a second chamber being when she was confined there against her will.

THE STANDARD FRAME of Germany is about a sixth smaller than the Langstroth. Lehzen, editor of the excellent *Centralblatt*, thinks there should be two standards—the larger for regions with spring and summer flow, and the smaller for regions with fall flow.

THE ROSE OF SHARON, by which I suppose is meant the althea, on p. 742, is not the thing that gave the vanilla flavor to that honey York raised. The tree or bush is too tender to live here. Sometimes I've had a little suspicion the flavor came from sweet clover; but then, again, I don't know.

THE BEE-LOUSE, Dr. Balint says, is not a parasite, as heretofore supposed, but a commensal or table companion, merely sharing with the bee the food taken by the latter.—*Bienenpflege*. [I believe this is right. I never have seen a case, and I've seen a good many, where the queen or bee showed evidence of harm from the so-called louse.—ED.]

CHILLED BEES, stranded away from the cluster in the hive, are nothing very unusual; but I think I never saw such a thing outside the hive till this fall. Sept. 22 we had a 90° temperature, and at night it dropped 40 or 50°. Next morning I found a few bees chilled on the front of the hive where a cluster had been hanging out the evening before.

MY SYMPATHY is with the man who complains of alteration of articles in *GLEANINGS*. There's that article of mine on page 739; the very best part of it is suppressed—the editorial footnote. [Yes, that was an oversight—that is, the last paragraph of yours. I have been trying to figure out whether it was a joke on me or you. As to the footnote in question, see editorial.—ED.]

J. I. EARL, p. 731, takes a wrong meaning from that Straw on p. 583. I meant it was of more consequence to have a big harvest than to have

correspondence with dealers in all parts of the world, and the expenditure of money which cost much self-denial to save. As a result of his wide reading, Mr. Malin was a well-informed man; and, although he did not seek conversation, being rather reserved in his manner, yet he showed by his remarks that he had good judgment, and possessed a mind conversant with a multitude of subjects in art, literature, and popular sciences.

In his intercourse with Managers and Physicians he was always most courteous, cheerful, and cordial in his manner. His long association with the physicians of the institution was unmarred by any unpleasantness; in fact, in consequence of his uniform amiability of demeanor many of the residents and members of the medical staff became his lifelong, cherished friends. Mr. Malin, soon after his transfer (in 1849) to the Pine Street Hospital, married Anna M. Langstroth, sister of L. L. Langstroth, who died in less than a year afterward, and without offspring; he did not marry a second time.

Although Mr. Malin's tastes did not incline toward medical studies, he showed great interest in the treatment of the insane. As the result of his observations, he presented to the Board of Managers, in 1828, an article on the necessity of providing a separate asylum for the insane; and, again, in 1834, a paper on employment of the insane. Mr. Malin's views possessed so much originality and force as to lead the State Committee on Lunacy to publish these papers in its annual report for the year 1884. Copious extracts have also been made from these papers on another page of this history.

Mr. Malin was buried August 5, 1887, in the Woodlands Cemetery, Philadelphia; and his collection of historical and Bohemian books have a permanent resting-place in the library of the Moravian Brethren's Church, at Bethlehem. His portrait is in the hall of the Hospital, just at the entrance of the office where he lived for so many years.

[Perhaps our readers wonder what the life of such a man, however good and noble, has to do with bee-keeping. As prepared by father Langstroth it seems to be a sort of introduction to a very important old letter on a subject touching one phase of bee-keeping upon which comparatively little is known. The letter was written to Mr. L. long ago, as you will see; and as it has never seen the printed page before, I am sure it will be read with interest now. But before I give you Malin's letter I will here give an extract from Mr. Langstroth's letter concerning it.—ED.]

Dear Ernest:—Since I sent you Mr. Malin's letter I find that there is a very full discussion of the question whether the honey-bee was indigenous to this continent, by Prof. A. Gerstaker, of Berlin, who sent it to Wm. Wagner. This article was translated by Samuel Wagner from the German, and published in Vol. II. of the *American Bee Journal* for July, 1866. Mr. Malin's letter to me was written in the fall of 1864, and antedates Gerstaker's essay; still I think that you will do well to publish Malin's letter; but I thought it only right to call your attention to Gerstaker's essay.

L. L. LANGSTROTH.

Dayton, O., Aug. 1.

WAS THE HONEY-BEE INDIGENOUS OR NOT IN THIS COUNTRY? A CAREFUL REVIEW OF ALL THE EVIDENCE.

PHILADELPHIA, Sept. 24, 1864.

Rev. L. L. Langstroth:—My Dear Brother:—I have consulted the paper of Dr. Barton, to which you re-

ferred me, and find that his conclusion, from all the evidence attainable in his day (1792), was precisely that to which my researches had conducted me; viz., that the honey-bee was not native, but was introduced from Europe. Had I known of Barton's essay it might have saved me some trouble, as he refers to, and quotes, sundry authors from "Purchas his Pilgrim," down to Bartram, which I had some trouble in hunting up. He, however, adds what I think a material fact as regards our inquiry; and that is, that none of the Indians occupying these regions had any original names in their languages for the bee or its products; and Elliot, when translating the Bible, was, in consequence, obliged to use the English names with Indian terminations. Subsequently, when the Delawares became acquainted with the honey-bee they applied to it their name for the wasp, and called honey by a name which signified the "sweet or sugar of the wasp;" and wax by one which meant the "fat, grease, or tallow" of the wasp.

I find that Barton's paper was prompted by one written by the Rev. Dr. Belknap, who contended that the honey-bee was native on this continent, in its southern portions, at least in Mexico and Cuba. I have read Belknap's paper, and have consulted the authorities he quotes, and am quite satisfied that he was wrong. Even he, however, admits that our insect was not found north of Florida, or the southern portion of Georgia. He also says, "There is a tradition in New England," the authenticity of which he was unable to trace, "that the person who first brought a hive of bees into the country was rewarded with a grant of land."

Further, Mr. John Josselyn (whose book I have also consulted), who was in New England in 1638, and again in 1663, in some account of his voyages published in London in 1673 thus speaks of the honey-bee: "The honey-bees are carried over by the English, and thrive there exceedingly."

The Rev. Mr. Heckewelder assured Prof. Barton that, although he had seen the true honey-bees wild in various parts of the United States at some distance from settlements, he was always assured by the Indians that these insects were not known in these countries before the whites began to settle them. Barton adds that it is very unlikely that these Indians could be mistaken on the subject, as they are by no means incurious observers, and are as fond of honey as the bears are.

Mr. Wm. Bartram, who traveled in West Florida in 1775, informed Barton that he was shown as a curiosity a bee-hive, the only one in that extensive country, introduced there from England when the English took possession of Pensacola in 1763. He had seen the honey-bee wild in East Florida, but was satisfied from his inquiries that it is not a native of the country.

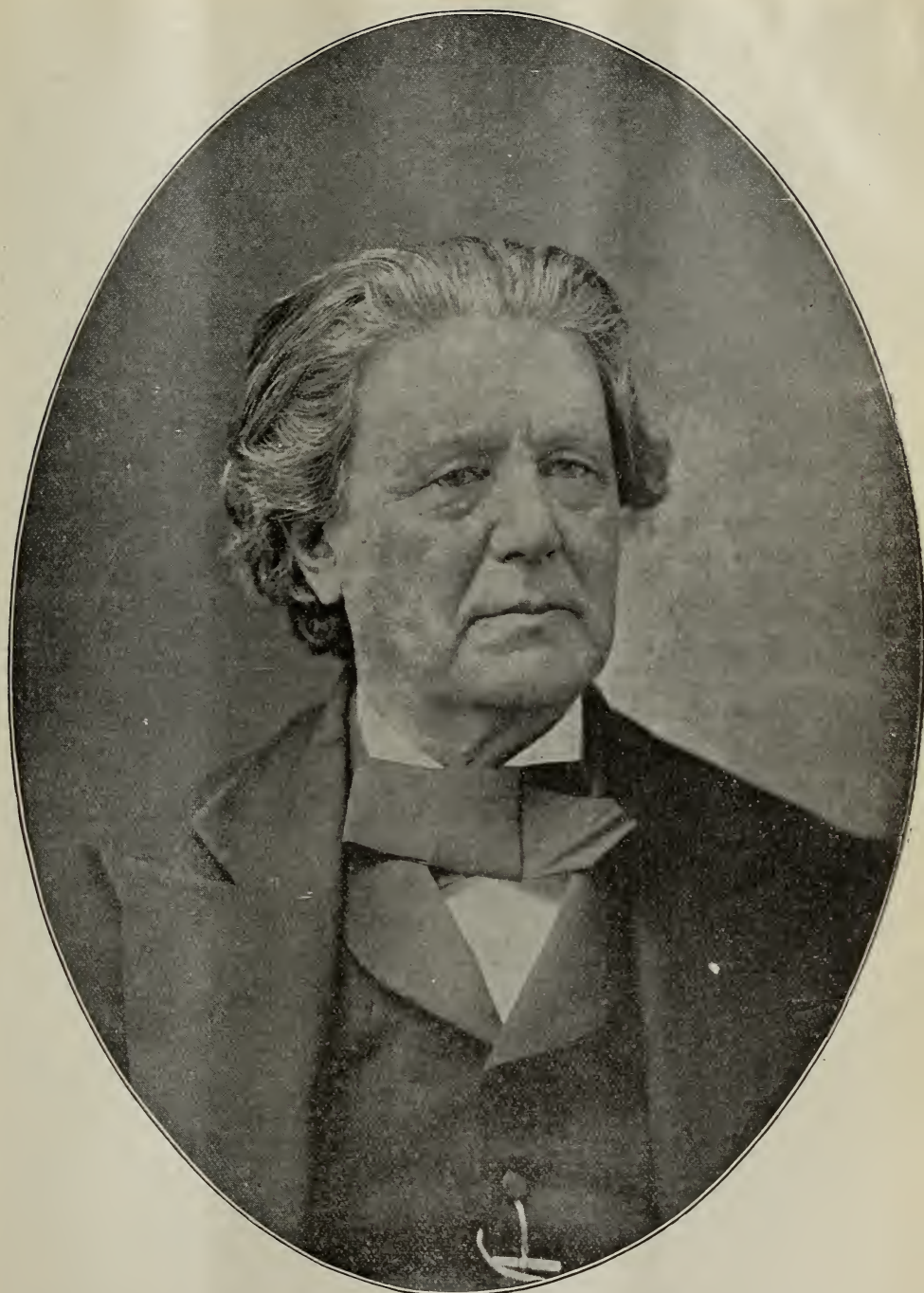
Barton says, "The honey-bee was not found by the first settlers in Kentucky; but about the year 1780 a hive was brought by a Colonel Herrod to the Rapids of the Ohio, since which time these insects have increased prodigiously." Was this not the probable origin of those seen by your octogenarian friend?*

The only authority quoted by Dr. Belknap for the probable existence of the bee in any part of the United States is the finding of a single pot of honey by the expedition of DeSoto at a place called Chihua, on an island surrounded by shallow water, supposed to be on the upper part of the Mobile River, in Southern Georgia. I have referred to the narrative, as translated in Purchas, and find that this was the only honey seen or heard of by the expedition,

*This refers to information given me by an octogenarian clerk of the courts, residing, in 1857, in Hardinsburg, Ky. He recollected seeing honey-bees at so early a date in Kentucky that he had always taken it for granted that they were natives there.

I had read somewhere that, at the time the honey-bees was first introduced in America, the Norwegians were not troubled by the bee-moth (*Tinea mellonella*). As the bees in New England were not infested by this moth until 1805, it would seem quite possible that the first bees imported into New England might have come from some country where this pest was not known, and not from any part of the English Isles where it had been so long known. (See Dr. Kirtland's account of its first appearance near Boston, Mass., in my work, "The Hive and Honey-bee," 3d edition, page 240.)

L. L. L.



Yours affectionately,
S. S. Langstroth.

which met with no bees. The granaries and store-houses of the natives were constantly ransacked by these needy Spaniards, from June, 1539, to July, 1543; and Barton pertinently remarks, "Had the honey-bee been a native of the countries which were the scene of DeSoto's villanies, the valuable products of this insect would have been frequently met with, and the bees, in territories pregnant with a profusion of nectareous plants, would have been seen very often, and in great numbers.

In addition to the above I may add that I have carefully consulted the narratives of many early travelers, from Father Hennepin down, and find no mention of honey having been met with on any occasion than as above stated. Had the Indians possessed honey would they not have set it before some of their guests? and would the latter, who mention every thing else they met with, have forgotten honey?

In conclusion, as no one pretends that the honey-bee was found in New England, as Josselyn, who, in 1638, must have known the first English settlers, and been familiar with their doings here, says expressly that they introduced our beloved insect, I think we may very safely dispense with the Norwegian theory of their introduction, and assume that the *Apis mellifica* is a valuable European insect for whose introduction and naturalization here we are indebted (as for many other blessings) to the people of the Mayflower, or their immediate followers.

WM. G. MALIN.

A PLEA FOR FIVE-BANDERS.

ARE THEY HAVING FAIR PLAY?

By A. Norton.

It seems to me that a great deal of hastily considered comment is being passed upon the five-banded Italians, and that undeserved denunciation is being heaped upon them. The fashion having been set, so to speak, by certain plain statements from the Roots, which in themselves are reasonable and moderate, it seems now that the majority are following the example only to outdo it, and that those who like the five-banders do not dare defend them. Let this race have fair play; and let all who find them as good as regular Italians (I don't see why they should be any better) give public testimony to that effect.

The claims coming from the Home of the Honey-bee, so far as I have seen them, are simply that some strains of five-banded bees originated in Cyprian and Syrian crosses, and are irritable, but that other strains are doubtless pure Italians, and as good as any. That is certainly all right. But now there are letters from certain persons in divers journals, claiming that these bees are not hardy; that they do not winter well; that the queens are not prolific; that they are not good honey-producers.

It may be safely stated, and depended upon, that you can not breed any points or characteristics into a race if you do not find a tendency that way to begin with; and you can not well breed a characteristic out unless there is originally a tendency to lack that characteristic to begin with. If the few years' breeding of this particular strain of Italians has already made them so inferior in so many ways, it only proves that the original three-banded parent race is so widely variable and unreliable in its characteristics that one can not depend upon them uni-

formly to be desirable bees. Even if a breeder should set out systematically to breed three-banded Italians down to inferiority as to honey-gathering, prolificness, and wintering, by purposely selecting the poorest in those lines, if the race is as uniform as we are led to suppose it to be, he should make slow progress because of not easily finding any very inferior stock to begin with. But in breeding five-banded stock the worst that can be said is, not that breeders purposely breed out good qualities, but merely that they think of nothing but color, and all other points pass unnoticed. But the mere fact that a certain queen's workers show more yellow than those of other queens, does not imply that they are either better or poorer in useful qualities than other Italians. They might incidentally be a little better or worse; but the main chances are that they would be about the same. Hence, in breeding from such a queen the stock could not deteriorate.

Now, taking the percentage of chances in all queen-breeding for five-banded bees, unless the parent three-banded stock is extremely variable and unreliable, I don't see how, in the few years so far past, the strain could have become materially better or worse than the regular stock. Does in-breeding cut a figure now with the large number of five-band breeders? How is it, then, with persons who advertise superior strains of three-banded stock (several such advertise in GLEANINGS, and hence we must assume their advertisements to be honest)? How can they perpetuate their superior strains without in breeding? If they mix in any of the ordinary outside stock, they must dilute and lose the superior quality of their own strains. One advertiser in GLEANINGS has bred Carniolans for yellow color, and yet has made an improved honey-gathering race of them. To change Carniolans to uniformly two or three banded bees is a greater change than that from three-banded to five-banded Italians. In-breeding and other detrimental influences seem, however, to be lacking.

While so many have dropped into the fashion of denouncing five-banders, I find some who praise them highly. Ira Barber, of New York, in a recent issue of the *American Bee Journal*, pronounces them, as the result of a few years' experience, superior to any others. (I should hardly expect them to be superior, however.) W. L. Coggsall, of Eastern New York, speaks highly of them. These persons have no queens to sell. I have had a limited knowledge of them; but that limited experience, so far as it goes, shows them to be gentle and industrious, with strong prolific queens. I find them working remarkably well in the scarce period of the California dry summer, late July, August, and September, and the queens keeping 12-frame hives, L. size, full of strong, active, yet gentle bees.

Looking among those who condemn them, I do not find any thing more striking than I notice in the difference between "Reports Encouraging" and "Reports Discouraging," where we find, from localities in the same State, and often quite near together, directly opposite reports. These differences are laid mostly to the season. But if any of the persons making them should have happened to be trying a new strain of bees, the latter would have come in for a large share of the blame or praise. Note what the majority of German bee-keepers say regarding blacks vs. Italians. From their preference we might think that nature, in breeding for three yellow bands, had produced an inferior race.

I do not go principally for fancy in bees. No bee-keeper, large or small, if he is sensible, will want less profitable bees because they look pretty. But if any one would not choose a handsome race in preference when the dollars and cents come in just as well, then he is lacking in a taste for the beautiful; and while we may not expect to cultivate taste in him, we are not expected to give it up ourselves.

I should like to have all, who can give facts to show that five-banded bees do not differ as to profit from three-banders, to send them in to add to what we already have, and see how much of a showing can be made. If these facts really can not be produced, then I will say, stop breeding them.

Monterey, Cal., Sept. 4.

[No publisher has tried harder to give the five-banders fair play than we. While I have not published all the adverse testimony, I have given, so far as I know, all that was in their favor. I myself at first felt quite kindly disposed toward them; but when I saw repeatedly their bad temper, their lack of hardness—when, indeed, this was further corroborated by letters continually, with few exceptions, I felt that it was simply the duty of GLEANINGS to set forth the facts. You may show *why* yellow stocks should not be any worse; but good theory on this point can hardly offset real practical observation of what they are. I have letters from two queen-breeders who say that, as soon as they get rid of them (the five-banders) they will sell them no more. One of these men says he has tried stock from all of the best breeders, with results largely the same. Another blames us for not scoring the yellow stock more than we do. These men do not wish their names used, because they still have stock to sell.

I don't think myself that the ordinary stock of Italians is invariably uniform; but the point is right here: It is so difficult to breed real five-banders, that, in order to get four, and perhaps five, every *other* point is very liable to be sacrificed. It is not so easy to select out certain desirable qualities so that they may be plainly shown in the daughters of a breeding-queen. If the goal is hard to reach, is it not better that we take that which is the most desirable—that quality or qualities that will bring to their owner the most money? Color may bring the most money to the breeder; but to the honey-producer, nothing. I don't believe it is practicable to breed for every desirable quality at once. The most we can expect to get at one time, in bees, is energy, hardness, and gentle-

ness, from a prolific mother. If the same time and thought were expended on these rather than on something that appeals to the eye, we should see more honey.

Of course, if we can have color at the same time with these other qualities, no one will be more pleased than I; but so far I don't see a very good combination that is from the progeny of the average run of yellow stock.

Later.—Since writing the above, neighbor Vernon Burt, who lives two miles north of us, reports that his five-banders were good honey-gatherers. We have a couple of colonies at our out-yard that have done well also. But if I am any judge these seem to be an exception. —Ed.]

SECOND-HAND SQUARE OIL-CANS.

HOW TO PREPARE THEM FOR HONEY; ALSO
SOMETHING IN REGARD TO THE
WATER WE DRINK.

By S. S. Butler.

I for some time have had in mind writing an article on cans, new and old, for storing honey. After a 20-years' experience, using thousands of cans, I am better satisfied with good oil-cans than to buy new ones. I have bought Lower California honey in new cans that were made of poor or lead tin, and so poorly put together that nearly all were in a leaky condition; but good oil-cans, always rejecting those that are rusty inside, being crimped at the seams, very seldom leak there, and, if well cleaned, I like better than the new ones made on this coast. I give 8 to 10 cts. for them. I melt off the four faucets by setting four cans, with the corners that have the faucets, together, putting a shovel of hot coals on them. A good worker can clean about 100 in a day by putting in a handful of unslacked lime in each, with 3 or 4 quarts of boiling water. After it is slacked, rinse it well, and afterward rinse out twice with cold water, washing them twice with lime. In that way it will clean them perfectly.

Having noticed your article on water, and in other places where you have spoken of nice cool pure spring water, I should like to say a word about nice pure spring water. I have made pure water a study for about 30 years, and have made up my mind that one can hardly ever find a spring or well of perfectly pure water. I have a fine spring. Two years ago I put in a cistern just where the spring was, going about 30 feet above, cutting off the several veins of water, and running them into the cistern. We dug down to hard clay, about 10 feet, through decayed vegetation, rotten roots, etc., that smelled almost as bad as a pig-pen. Pure water? Ugh!

I have invited people to come and see my simple apparatus that I have used for over 20 years on our stove to distill or condense our drinking-water—the only pure water.

We should purify the water we use outside, not inside our bodies. Our bodies being composed of over seven-tenths water, just as much as

we need pure air, just as much do we need pure distilled water, which is the only pure water. Water is the great cleanser, and is not pure, no matter from what source. Even rain water collects impurities and microbes as it descends. Water from lakes, springs, creeks, and rivers, has earthy salts, carbonate of lime, various minerals, decayed fish, worms, snails, and lizards, millions of microbes and animalculæ. The excrements of fish, worms, and the thousands of insects, birds, and animals, that live in and frequent the water, are found in it. A dead frog or rat occasionally comes up in the well-bucket. Do you think such water is healthful? All impurities are left behind when water is turned into steam, and that condensed or turned into water, and in no other way can one get pure water. There is no filter that will take out all impurities. My condenser gives us drinking-water while getting our meals.

Los Gatos, Cal.

[Friend B., your instruction in regard to using second-hand oil-cans will probably be valuable to many of our readers; and I am greatly curious to know about that home-made apparatus for getting distilled water. Can't you describe it, or make a rude picture of it so we can have it illustrated? In many localities I suppose such a method is almost the only one for getting real nice water to drink.—A. I. R.]

THE DARK AND BRIGHT SIDE OF APICULTURE.

THE "OTHER SIDE" TO THE DARK SIDE PRESENTED BY FRIEND DOSCH ON P. 737.

By J. P. Shaw.

In reading GLEANINGS last evening I noticed the article on page 737, written by L. A. Dosch, of Miamisburg, O., very discouraging indeed. Now please excuse mistakes, as this is my first writing. I live not quite three miles from Mr. Dosch, up the Miami Valley. Three years ago I started with one hive; increased to ten, but got no honey; wintered through all right. From six of those ten last year I got 280 lbs. of section honey; increased the other four colonies to 15. Starting in last winter with 21 colonies I came out in the spring with in fair shape—a loss of two colonies.

Now for this dry season. started 12 colonies to working on sections, and got 400 lbs. of section honey from them, leaving plenty for winter. The other 7 colonies increased to 15 last year. With 6 colonies I got 280 lbs.; and my neighbor, with only a fence between our bees, got 10 lbs. from 7 colonies. I think there is a great deal in the management of bees. So you see this locality is not so bad after all. Sweet clover here is the main honey-flower. As dry as the summer has been here, it grew from 5 to 6 feet high, and the bees just swarmed upon it. I use the eight frame L. hive, and I

contract down to six frames at the commencement of the honey season, and feed a little in the spring at the right time. I do not think this locality so bad as friend Dosch does. I guess I shall have to go down and buy him out.

West Carrollton, O.

J. P. SHAW.

[A difference of only three miles sometimes makes quite a difference in the honey; still it is not improbable that your superior management accounted largely for the difference in results. When a man is utterly discouraged, as friend Dosch is, he is not apt to put the best foot forward; in other words, use the best and most economical management.—Ed.]

ISRAEL'S CROSS-EYED BEES.

FOUNDATION IN SECTIONS VS. FOUNDATION IN BULK OF THE SAME AGE; AN INTERESTING AND VALUABLE EXPERIMENT.

By J. P. Israel.

I have for many years enjoyed the reputation of being the boss idiot of Southern California. No man so far has questioned my title or contended for the championship. But the bees this year have stripped me of my honors, and I have yielded up to them the belt so long and honorably worn. This is how they went about to do it.

When the time came, in the spring, for putting on sections, I found I had more than enough, with foundation already in them, to cover my whole apiary. This foundation had been put in these sections more than a year before; and on our failure to get honey in 1894 the sections were stored away. I thought I was fortunate in being all ready for the honey crop, and piled on the sections liberally. Ten days afterward I looked over them to see how they were building. *Every* colony that had gone into the upper story was building *crooked*! Their favorite way of building was *crosswise* the sections, as if they wished to bind them together with iron bands. Crosswise, cat-cornered, around the corner and back again they came. But the foundation, they would not touch. It was pure wax, made in this apiary, and run out by myself. What could be the matter? I sat down on a hive to meditate.

"Here," said I, "is a whole apiary gone mad crosswise! I will get at the true secret of this state of affairs, even if it takes me all summer."

I got my microscope and examined the bees, and, lo! the secret was out. The whole apiary was *cross-eyed*. I stood aghast with astonishment and consternation. Could it be possible? Oh for a carload of "them fellers" from the East who know it all, to tell me how to breed back again to straight-eyed bees! I could see through the crooked part of it very plainly. When a bee got on to a piece of foundation to draw it out, being cross-eyed he was actually not there at all, but around the corner, build-

ing a cross-section between the two sheets of foundation. Don't you see it plainly?

But to make assurance doubly sure I tested my microscope by a first-class instrument, and found that it was *my glass* that was *cross-eyed* instead of the bees. So I had to seek a solution of this extraordinary freak in another direction. This foundation had been suspended in the sections for more than a year. Might it not, in that time—being in single sheets—lose some of its essential oils, and be unfit for the bees—too hard and flinty? I had more of this same foundation (in bulk) which I believed to be good. So I took the sections off the whole apiary, and replaced the foundation with that which was kept in bulk (but of the same lot), and the bees went at it and built as straight and beautiful combs as ever.

Now, to me this proves two things: 1. Foundation suspended in sections will not keep a long time without losing some of its "internal arrangements" which are necessary for the bees. 2. Foundation in bulk will keep a long time, retaining all its elements intact which are required for its successful working into comb. So you can notify that "carload of fellers" not to come all at once, but three or four abreast.

DO BEES EVER GATHER WHITE-SAGE HONEY EXCLUSIVELY?

Well, Rambler has knocked all my ideas in regard to white sage into pi. If there is one single spot in all California where bees gather honey from the white sage exclusively, I did not know it. It must be a poverty-stricken place for other flowers, for the bees *will* work on other flowers while they are working on the white sage. It is different with the black. They will touch no other flowers while the black sage remains in full bloom. I did not believe that any man ever secured a single pound of pure white-sage honey in all California or any other place. The black sage comes out first, and, while that lasts—although the ground is carpeted and the chapparal is interwoven with flowers—the bees will stick to the black sage. Thus we get the first half of our crop from the black sage. Then the bees change to the white sage and the thousands of flowers that bloom with it. The consequence is, that the honey is always a mixture—amber, some light and some darker.

But Rambler has found a place away back in the Sierra Nevada Mountains where the bees revel in the white sage, and the white sage alone. How I should love to taste it and compare it with pure black-sage honey!

Escondido, Cal.

[Experiments made recently by the Michigan experiment station, as well as the testimony of competent bee-keepers, go to show that old foundation is as good as new. But I could not understand *why* a few observers equally competent should think it was not; but in the light

of your experience I think I understand. The last mentioned, those who reported adversely regarding the old foundation, tested it probably when it had been a year in the frames or sections before giving it to the bees to be drawn out. Of course, being exposed to the free circulation of air it would dry in a way that the same article in the bulk would not. If this is true, and it certainly is reasonable, friend Israel has called attention to a valuable fact worth considering. I should like to hear from others on this point.—Ed.]

RAMBLE 141.

LOST IN THE WEED-PATCH.

By Rambler.

After passing Tulare we were again in an uninhabited country. Away to the east, the Sierras present a dim outline against the horizon; to the west, the Coast Range presents much the same appearance; between them, a broad prairie at least 100 miles wide, many portions of it having all of the qualifications of a desert. The portion we are now passing over is dry, parched, and not a tree or blade of green vegetation to relieve the monotony.

O solitude! where are the charms
That sages have seen in thy face?
Better dwell in the midst of alarms
Than reign in this horrible place.

To my notion, solitude can be endured and even enjoyed where there are running brooks, trees, rocks, and some animal life; but out on a barren plain, please excuse me. Little railroad stations loom up occasionally. We are just about out of sight of one, when away ahead of us another begins to rise as it were out of the desert. Here at the little stations of Poso or Kimberlena would be just the locations to start experimental queen-rearing apiaries. The isolation would be complete, and the fertilization of the queen with any choice strain of drones could be easily controlled. I would suggest that the new woman, unmarried and of uncertain age, here organize a colony as outlined in Tennyson's "Princess," where dogs, cats, pigs, etc., are all females, and the death-penalty is the fate of all intruding males. I am afraid, however, that the scheme would not work; for in queen-rearing, drones (the male bee) would have to be tolerated. My suggestion, though, is worth acting upon so far as queen-rearing is concerned, and I hope some one will act, and reap fame and fortune.

It was upon this broad and barren plain that we had the pleasure of witnessing that curious natural phenomenon, the mirage. All along the distant western horizon there appeared a narrow belt that glistened and shimmered under the mid-day sun, and for a time we were deceived with the idea that we were in sight of the shining surface of a lake or river. The same appearance soon presented itself in our

rear, and beyond the shimmer we could see the far-away stations we had passed in the early hours of the day, which had been some time out of sight; and then it dawned upon us that we were in the land of the mirage. We could seemingly look so far away that it appeared like a beautiful fairy-land; and the dancing of the sunbeams seemed like the fitting to and fro of the fairies. It was a pleasure for me to imagine such a land. I was lost in the contemplation of its beauties; and, indeed, if this were but the vestibule of heaven I longed to be there.

My intensely practical companion, however, thought we'd better move on, and my airy ideas came down with such a sudden thud when I thought of his ton angels that my tongue refused utterance until we had entered the thriving town of Bakersfield, and the mirage had disappeared. Quite a number of bee-keepers live within trading distance of this city; and the conditions for honey production are much the same as we find further north in Tulare and Fresno Counties. We could not hunt up these good men, for we were now upon a genuine stampede for the south; cool nights, threatening skies; and still between us and our home the frowning Tehachapai Mountains, and the little less frowning San Fernando range.

We arrived in Bakersfield Saturday afternoon; and, after laying in a new supply of provisions, we resolved to push right along and travel all day Sunday. We were aware that "a Sabbath well spent meant a week of con-

ed ourselves by a weed fire, and in our sleep dreamed of weeds.

Soon after breaking camp Sunday morning an unforeseen circumstance presented itself—Reina went lame, and our progress the rest of the day was extremely tedious. The drive during the forenoon was relieved by seeing now and then—more often than than now—a vacant cabin. At one place among the weeds we were surprised to run across a small apiary of about 20 colonies. The bees were at home, and had a committee out to receive company in their aggressive way; but the cabin near by was vacant. We knew it was vacant, because we could see through it about as easily as we can see through an old-fashioned Ea-tern corn-crib, and thus a weed-patcher lives. We did finally find a good dwelling with an occupant, and he gave us the gratifying intelligence that we had traveled twelve miles further than necessary. He kindly pointed out the road which we could see for twenty miles ahead of us, leading toward the Tejon (Tá-hone) Pass. Not a rod of this country is interesting; and if we were to choose a route for scenery it would not be in the upper San Joaquin Valley.

Water is a valuable element here, and is plentiful after digging very deep into the earth. An Italian weed-patcher loaned us the use of his well, and gave us a lesson in hydraulics. A large coil of rope lay upon the ground; the end ran over a pulley to the bucket. When bucket and rope, after a long paying-out, had disappeared in the well, our Italian weed-patcher pointed to a path that led out toward Bakersfield, and told us to take the end of the rope and travel that way, and pull. He was to fire a gun to let us know when the bucket was up. Wilder and I started for Bakersfield, 20 miles distant, with the rope over our shoulders. We traveled some time conversing pleasantly by the way, and imagined that we looked like the pictures of Samson laboring under the gates of Gaza. After a while we began to speculate upon the nearness of that bucket to the surface.

It was heavy tugging; all of a sudden the weight became so laborious that we desperately tied the rope to a weed and returned to the well. When we took in the situation we were just mad. That miserable Italian, while waiting for the bucket to arrive, went to sleep. We shook him up lively, and, after yawning and looking at his well, and seeing the water spilled all around, he went tearing mad too.

"Zee here!" he shouted; "yous alfiert Americanos, yous pull pull. Zee here! gone pottom of zee well; pull up: py gar, yous pay zee hunner tollar—zee hunner tollar, I zay."

Now, we had not the remotest idea of pulling



"WE STARTED FOR BAKERSFIELD."

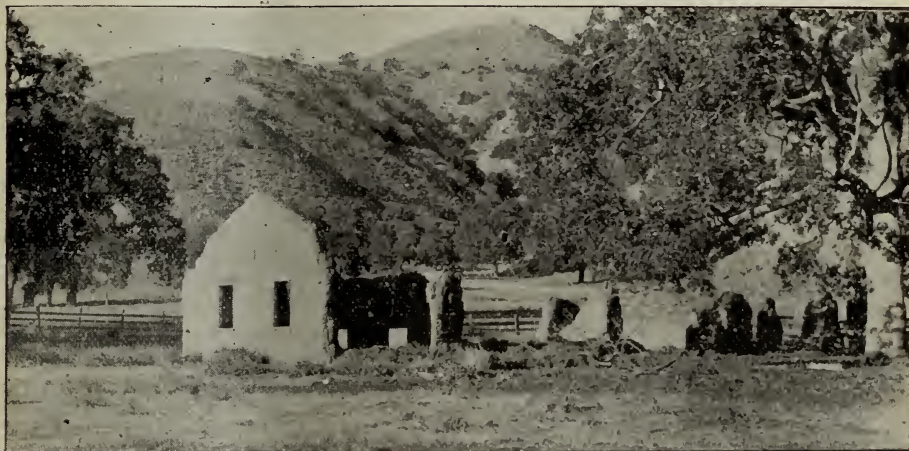
tent, and a joy for the toils of the morrow;" and in all of our long journey we had traveled on Sunday only where the necessities of feed for our horses compelled us to do so for a few hours. This time, soon after passing our Sunday-travel resolution, we left Bakersfield, and, among the multitude of trails across the plains, we easily succeeded in getting upon the wrong one. Our next mishap was to get directions from a drunken teamster who sent us into what is locally known as the weed-patch, and still further off our route. After toiling through the sand until long after dark we camped among the weeds; boiled our coffee, and warm-

up the bottom of his old well; but this being a day of untoward events we expected almost anything to happen, and were not surprised. We felt guiltless in that respect, for he was to blame for going to sleep, and we so convinced him.

Now, if the foregoing seems to be something in the line of an allegory, it goes to show the many petty phases in which an Italian will grasp to turn a dollar to his own benefit. Those who have never met an Italian only as an organ-grinder, as we know them in the East, do not understand what thrifty people they are. The climate of California, so like that of Italy, attracts thousands of them to this coast, and they will settle down in such a place as the weed-patch, or in a worse place, where an American would starve, and make a living and accumulate some wealth besides. Their methods of getting the dollar are not altogether

hired men, he was entertaining a convivial Irishman who also had bachelor quarters in the pass beyond. I would have taken this genus *homo* to be a Scotchman; but Irish he said he was, and Irish it is. He entertained us with song and story, and it required but little observation to teach us that he was a bookish man, a lover of nature, poetry, and his fellow-man. In the morning, when he departed for his abode, he informed us that our route lay directly past his door, and he gave us a cordial invitation to enliven the lonely hours of the evening in his cabin.

We were now in the extreme southern and upper end of the great San Joaquin Valley. From Merced we had followed it continuously for nearly 200 miles, and no one can ever appreciate its greatness until he travels through it with a camping-outfit. There is room enough here for a grand empire. We can drop into



RUINS OF FORT TEJON (TAHONE).

honorable at all times. The Italian woman is as sharp as the man at a bargain and much sharper with the tongue.

Whatever might have been our vexations during the day, we were most fortunate that evening in finding a camping-place near the cabin of a young American bachelor rancher. Here, instead of going several miles, more or less, into the ground for water, the precious fluid was drawn several miles in barrels, and we were able to get a supply without much vexation on our part.

In the evening we were made welcome to the warming influence of the cabin-stove. We have found that a large number of bachelor ranchers outside the ranks of bee-keepers usually blacken their floor and mop their stove; but this young American reversed the order, and the cheerfulness of his cabin was that much enhanced. Besides his two bachelor

this valley the States of Maine, New Hampshire, and Vermont, and then have some room to spare. We leave it now, pleased that we have been permitted to traverse its waste places, its fertile lands, and its populous cities. As indicated around Selma, Hanford, and Bakersfield, the possibilities for honey production are great. In the near future, under the magic influence of irrigation, hundreds of thousands of people, and among them thousands of bee-keepers, will here find prosperous and happy homes.

We leave the great valley through the Tejon Pass, and encounter in its narrow defiles the ruins of old Fort Tejon. In early days this was an important strategical point; but now, in the poetical language of our Irish poetical friend,—

We stand to-day amid the ruined walls
Of what was once the famous Fort Tejon.

Where lovely women graced the princely halls;
 Where brave men answered to the bugle-calls;
 Where war-steeds chafed impatient in their stalls;
 Scarce aught remains but scattered brush and
 stone.

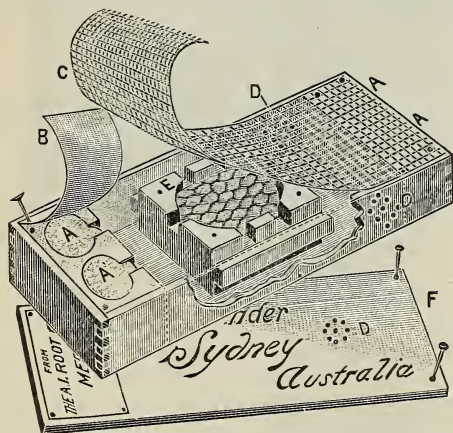
MANUM'S LONG-DISTANCE MAILING-CAGE.

THE USE OF HONEY IN COMBINATION WITH
 CANDY.

By A. E. Manum.

I mailed you a few days ago one of my long-distance mailing queen-cages for your inspection and criticism. I was led to do so by receiving two of *your* long-distance queen-cages, already provisioned, addressed, and stamped, with a request that I use them for mailing two queens to one of your customers in Australia.

My first thought was, upon receiving your cages, that I would not use them, but would use mine instead; but upon further consideration I concluded to use them just as you had them prepared, inasmuch as I had an order for queens direct from Australia. I thought it a grand opportunity for me to test the merits of the two cages. One of the queens sent in your cage was the same age, and an own sister of the one sent in my cage, and, to all appearance, the two queens were alike. I am thus particular in giving you these points, that you may join me in watching results.



The reason why I hesitated to use your cage was because I had tried the same cage before for mailing queens to Australia, and failed in my attempt to get queens there alive; and as orders for queens continued to arrive from that source, I decided to attempt the construction of a cage in which I could safely mail queens to the distant land above mentioned; and the cage I sent you is the result of much study of the requirements of the bees while on so long a journey. I took into consideration the changes in temperature they would necessarily experience on that long journey.

You will notice that, in the center of the cage, there is a compartment into which a small piece of comb honey is placed, there being 6 openings, or passageways, to this compartment, so that the bees can enter it from four sides, and partake of honey whenever they desire. There are also four places—two at each end of the cage—for the reception of the ordinary (sugar and honey) queen-candy, which I make as hard as possible with my hands.

My object in using honey in this long-distance cage is to give the bees a small ration of their natural food, which I anticipate will last them a good portion of the journey; but should it fail to do so they have the candy to fall back on. The honey is placed in the center of the cage in order to balance the cage, and also that the bees may have access to the honey from each chamber as well as to the candy; hence they can partake of either candy or honey from whichever chamber they may happen to be in. There are also four passageways through which the bees can pass from one chamber to the other. Each chamber is $2\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ inch, making ample room in each chamber for 75 or 80 bees, and food enough in the cage to last at least 60 days. The outside dimensions of the cage are $7\frac{1}{4} \times 2\frac{1}{4} \times 1\frac{1}{2}$ inch, and it weighs, when ready to mail, 5 oz., the same as your cage.

Now in regard to your cage, I consider the *one* chamber too small for the number of bees I consider desirable to accompany the queen on so long a journey, since it often takes 40 days for them to reach their destination. And, again, in your cage the bees are obliged to subsist entirely upon candy. I am aware that yours is much the cheaper cage to make; but when we warrant the safe arrival of queens, it is to our advantage to use the cage that will carry the greater number through safely, because it would require many cages to equal the loss of one queen. And, on the other hand, if we do not guarantee the safe arrival of queens, it is to our advantage to look after the welfare of our customers. It always gives me great pleasure to receive cheerful letters from my customers, as I am sure it does you.

Bristol, Vt.

[This cage, I must acknowledge, is a better one than the one we have been using for the same purpose. Indeed, I was so well pleased with its general construction that I made arrangements with friend M. whereby we could manufacture and use it for our own business.

Instead of being made of a solid block bored out, it is made of strips of wood dovetailed together as shown. This construction secures at once both lightness and strength—very important factors, by the way, in an export mailing-cage.

Like our export Benton it has holes at each end to take the prepared candy food, and in addition has a little chunk of good sealed honey secured in the center. This was, as I judge by the sample before me, cut out the required size to fill the oval hole in the block at E, and was then given to the bees just long enough for

them to lick up all the drip. It may then be slipped into the block, and secured to the block E by means of a little melted paraffine or wax, painted along the edges of the comb in contact with the wood.

B is paraffine, or waxed paper, to cover the candy A, and is the same idea that is used on our export Benton.

Of course, the use of sealed honey in queen-cages is very old; but how often it has happened that we have gone back to some *old* things! In this case we combine a new and an old idea together. If the candy fails, the honey is at hand to relieve the situation.

A year ago one of the friends in Australia, I forget his name, urged the use of a little piece of comb honey, as he had tried it with success. Well, Manum, in this country, got ahead of us, and I guess has made a better job of it.—ED.]

THE RIGHT KIND OF FRAMES.

THE V EDGE TO HOFFMAN FRAMES; SELF-SPACING FRAMES; OBJECTIONS TO THE STEPHENS SPACER; FURNITURE-NAILS NOT ENTIRELY SATISFACTORY; WIRE FINISHING-NAILS PREFERRED.

By Dr. C. C. Miller.

While the controversy has been going on as to the proper size of hive, I've been trying to settle on a frame—not the size of frame, for the size $17\frac{1}{2} \times 9\frac{1}{2}$ is so well established that I haven't thought worth while to consider that further; but there hasn't been the same stability as to the kind of frame. Just as something seemed to be coming generally into use, some change would be made, and I might as well be picking out all the good points I could find in order to unite them in a frame that would satisfy me at least partially.

At first I thought I liked the Hoffman frame with the shouldered top-bars, and didn't see the sense of the Medina people in so soon making the change to the V-edged end-bar. But on longer use I found in actual practice that there was such an accumulation of propolis that each frame was practically $\frac{1}{8}$ of an inch wider at the shoulders. Nothing so very bad in that if the hive had been wide enough; but as it added half an inch to the total width of eight frames, they were so crowded in the hive that it was a difficult job to get out the first frame. I'm not sure that it wouldn't be a good thing to have the inside width of a hive $12\frac{1}{2}$ or more, instead of $12\frac{3}{8}$; but I've always tried to keep as closely as possible in the beaten track of that which is most generally in use.

The Hoffman frames, as now made by the A. I. Root Co., have the advantage that, no matter what the accumulation of propolis, by squeezing hard enough and long enough you can get them into place, because that V edge cuts its way through the soft propolis. But they have the disadvantage that such an amount of propolis is none too easy to pull apart.

Another thing about all frames that are spaced only a portion of the way from the top, is that, when you lift a hive and look under, you

are surprised to see the irregular spacing of the bottom-bars. To obviate that, the frames should be spaced at the bottom as well as at the top.

As it seems pretty well settled that the distance between top-bars should be $\frac{1}{4}$ inch, I know no good reason why the same distance should not be preserved between end-bars and bottom-bars. With the usual wider space, there is some trouble with brace-combs.

By spacing at bottom as well as top, it is possible to have a much smaller point of contact between the frames; and the smaller the point of contact, of course the less trouble with propolis. So I had some frames made with top-bar, end-bar, and bottom-bar all the same width, $1\frac{1}{2}$ in.; thickness of top-bar $\frac{1}{8}$. If there were no other reason for this thickness, there is reason enough in the fact that it keeps the brood-combs and the sections that much farther apart; and when the sections are too near the brood-combs they are darkened thereby. End-bar $\frac{3}{8}$ thick; bottom-bar $\frac{1}{4}$.

I studied a good deal on the matter of spacers. The Stephens spacer, with its two nearly cutting edges at right angles, gives the smallest point of contact of any thing I have seen, and smallness of contact surface is the especial desideratum to fight propolis. An objection to the Stephens spacer, however, is the fact that it spaces the frames from center to center at a fixed distance; whereas the thing desired is to have an exact space *between* the frames. One of these would secure the other if all frames were made exactly true; but, unfortunately, there will be variations in thickness; and a variation of $\frac{1}{16}$ in the thickness of top-bars may cause the distance between two top-bars to vary anywhere from a space of $\frac{1}{8}$ inch to $\frac{3}{8}$.

I wanted something, much on the principle of the Stephens spacer, and searched Chicago twice to find some kind of staple that would project $\frac{1}{8}$ inch above the surface into which it was driven, two antagonizing staples being at right angles to each other. The nearest I could come to it was the common double-pointed tack; but this could not be driven into the wood without splitting it. The only fear I had about an arrangement of this kind, providing I could get something that would drive without splitting the wood, was that each staple, being only $\frac{1}{8}$ in. distant from the opposite frame, the bees would fill that $\frac{1}{8}$ in. with propolis. But that would be nothing like the amount of gluing done with the Hoffman frames.

As a temporary shift, I used wire finishing-nails, knowing well the danger of these nails catching in the adjoining frame. I also used some furniture-nails. The latter I don't like, upon trial, as well as I expected to. While they do not catch as do the finishing-nails, the bees feel it their duty to fill out with propolis all the space between the whole of the nail-head and the opposite frame. As a result it takes quite a

pull to get the two frames apart. The heads of the wire finishing-nails are only about $\frac{3}{8}$ across, so that very little propolis is put around them, and a very slight pull brings them apart. I like them very much better than I expected to.

In the under side of the top-bar is a saw kerf $\frac{3}{8}$ wide and $\frac{1}{4}$ deep, to receive the upper edge of the foundation. The frame is wired in the usual manner with four horizontal wires. The foundation is cut just the proper size to touch each end-bar, and $\frac{3}{8}$ deeper than the inside depth of the frame. The upper edge of the foundation is inserted in the saw-kerf, and then allowed to settle down on the bottom-bar before the wires are imbedded in the foundation. After the wire is imbedded, a strip $\frac{1}{4}$ or 1 inch wide is cut out, all but about an inch at each end. The lower edge of this strip is about $\frac{1}{4}$ inch above the lower wire. In this way I have frames filled solid with comb; but for some reason that I don't understand, some of the combs bag a trifle at the lower wire—nothing very serious, however.

I've only a hundred of these frames in use; and before I get any more I'd like to be told what change to make in them. Advice is solicited from all quarters. You will probably believe that I don't want to be in too much haste about getting a large number of these frames in use at once when I tell you that I have 500 loose hanging frames and about a hundred less Hoffmans, all wired ready for use, and I'd like to know a little better what I want before getting ready another lot.

Marengo, Ill., Aug. 11.

[You are right in considering the size of frame as pretty well settled. While I have been very well pleased with the Hoffman, I know there are some who would prefer something a little less fixed when propolis is bad in the fall of the year, or when the atmosphere is a little chilly, making bee-glue hard and stiff.

The objections that you have named against the Stephens spacer holds good; and there is still another and a more important one—the expense.

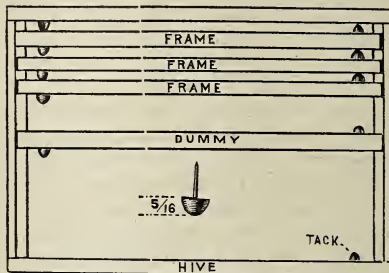
Finishing-nails for wires are used by some bee-keepers, but have never become very popular. A serious objection is their obstruction to the uncapping-knife, and their interference to the extractor caused by the nailhead catching in the meshes of the wire cloth in inserting and removing the frames. There is still another objection; and that is, if the nail itself is not crowded deeper into the frame in which it is driven by use, its head will in time gouge a hole in the other frame. Either would destroy equal spacing; and the great feature of the Hoffman frame is that you can crowd on one frame, and push as hard as you may, you can not destroy the exact spacing, because the wide perpendicular edges are sufficient to stand the strain. Suppose, for instance, that you remove a couple of frames from the center of the brood-nest. It is the fall of the year, and the four outside frames next you, we will say, are stuck down. It requires a little leverage to crowd them over *en masse* to fill up the space. Whatever spacer we have should be one that will stand a hard squeeze.

If you must have something different from

the Hoffman, I am inclined to the opinion that something on the order of a furniture-nail would be far better, notwithstanding your objection. You can not drive it too deep, and it will stand the squeeze. If the nails you tried with rounding points are not just the thing, how would those do that are perfectly conical?

As some of our newer readers may not understand the furniture-nail spacer, I introduce an engraving with the description that appeared in GLEANINGS for 1890, page 481.

As so many are suggested, I'll tell you one I'd like to try, but, oh dear! I'm so crowded in the busy season that it isn't likely at all I can try it; but some one else may. I think it may be very old. Get a furniture-nail whose head projects $\frac{1}{8}$ of an inch, or a square block of wood of the same thickness, and drive into one side of the top-bar at one end, just over the end-bar. Put one on the *opposite* side at the other end, and your spacing is complete so far as the frames are concerned. The dummy must be treated in the same way (for I imagine a dummy is important with fixed distances), and on each side of the hive must be a spacer where there would be one if a frame came in place of the side.



VERTICAL VIEW OF HIVE, DUMMY, AND THREE FRAMES WITH SPACERS.

To make it more satisfactory, I think a spacer should also be put about half way down the end-bar.

C. C. MILLER.

The heads of these furniture-nails are $\frac{1}{8}$ or $\frac{1}{4}$ inch deep, depending, of course, on the width of the top-bar. They are just deep enough to reach from one top-bar to the next; and as they are put on alternate edges, as shown in the diagram which we reproduce, exact spacing will always be secured.

The advantage of such a spacer is, that it can be attached to frames already in use. It can be used or not, as preferred. They are cheap, and will space top-bars just exactly the same distance apart, no matter whether they are sawn exactly the same width or not. As this spacer was proposed away back in 1890, I should like to hear from those who have used it since that time; and if so, how they *still* like it; if discarded, why discarded.—Ed.]



PREPARING THE BEES FOR WINTER.

Question.—Will you tell us something in GLEANINGS about how to prepare our bees for winter—when it should be done, and all about the matter?

Answer.—Well, this is a pretty big “dose” for once, and more than can properly come into one issue of GLEANINGS; but I will do the best

I can; and if space will not permit me to say all I should like to, I may try again in some other issue. Many seem to think that the latter part of November or December is early enough to prepare bees for winter; but some of our best apiarists have learned that the best results in wintering can be secured only when preparations are begun early in the season, so that the inside of the hive need not be disturbed after cold weather arrives. Therefore all colonies are to be looked after as soon as the honey-harvest is over, to see that they have good queens, and that there is plenty of brood in all stages, for this brood is to produce the bees that are to live through the winter months; and if, for any reason, there is not plenty of brood at the end of the honey-harvest, it is easy to tell what the result will be the following spring. If any colonies are found that have been and are short of brood, the queen should be changed for a good one, and brood from those which have an abundance be given them so that they can build up so as to be sufficiently strong in bees before cold weather sets in. If by any means, after all our precautions, the 20th of October finds us with weak colonies, they should now be united; for it is useless to attempt to winter very small colonies unless we have some special place to put them in, which has proven in the past to be sufficiently equal to the wintering of such colonies. Again, we wish to know that all have honey enough of good quality for winter. Good quality in honey has as much to do with the safe wintering of bees as any one thing that can be named; and he who does not pay any attention to this matter can not expect to succeed. But what is good quality in honey? may be asked. If we look to nature for an answer, we shall find that, as a rule, the honey which a colony left undisturbed has in store, is that which has been in the hive long enough so that it is thoroughly ripened, having that rich, smooth taste we all like so well. Now, such honey as this can not be gotten, just at the close of the season, where the extractor has been used till the very last thing, as many novices persist in doing, leaving only the thin watery stuff which comes at this time of the year for the bees to live upon. In my opinion, upon the injudicious use of the extractor is chargeable much of the loss of bees in winter; for where we hear of large yields of honey taken with the extractor late in the season, we almost always hear of a corresponding loss of bees by the same parties the next spring. To overcome this difficulty it is better to set aside enough combs of thoroughly ripened sealed honey during the season to winter our bees; and then, when the honey yield is over, exchange combs with the bees, extracting all that is left in the combs taken from the bees if we so desire. In this way we are sure that the bees have such honey as they

ought to have to winter on. This applies only to those who are prone to extract too closely during the season; but it is a good plan to work a few colonies for such combs of thoroughly ripened honey to be used in case of emergency, no matter how the bees are worked.

Another reason why we should not put off preparing the bees for winter till cold weather comes, is that, if we do this, they can not well get their winter stores near and around the cluster in time for them to settle down into that quiescent state so conducive to good wintering, prior to November 10th or 15th. To arrange these stores, and properly prepare them, requires warm weather; hence all will see the fallacy of putting off caring for them till cold weather arrives. To be sure all have the desired amount of honey, there is only one certain way to do; and that is, to open the hives and take out each frame and weigh it, after having shaken the bees off from it. Next weigh a frame of empty comb, or several of them, so as to get the average weight, which, when deducted from the weight of those in the hive, will give the weight of the honey. If it is found that there is 25 pounds of honey, said amount is sufficient for winter where the bees are to be wintered outdoors; or if 20 pounds, that will do very well where bees are wintered in the cellar. If less, the deficiency must be made up; if more, it can spare some to help another colony which may be short. In this way go over the whole yard, equalizing and giving stores as is required, till all have the required 20 or 25 pounds.

"But," I hear some one say, "this is a fearful job to shake the bees off from every comb, and weigh it." Well, so it would be if done with each colony; but you will have to do this with only one or two till you get the right conception of just how much honey there is in each frame by simply looking at it and holding it before you, when you can count off the number of pounds almost to a certainty. However, you will have to weigh a few, if you have never practiced this plan, to give you the necessary training required. I can count off combs of honey so as to rarely vary one pound on the whole hive, and yet do it as rapidly as I can handle the combs; and when the apiary is thus gone over, there is a certainty about it which gives the apiarist a great advantage over any other mode of procedure, which can be little above guesswork at best. If there is not enough honey, after all are equalized in the apiary, to give sufficient stores to all, then draw on those combs you have set aside for emergency; and if not enough of these, then you will have to resort to feeding. As I go over the hives in this way I carefully note the quantity of bees, age of queen, amount of pollen in the combs, etc., which is jotted down on a piece of honey-section, this piece being left on

top of the hive, so that the next spring I can tell just what was in each hive the fall before, so that in case of loss I can form some idea of what occasioned it. This little piece of section also helps me in deciding what queens to supersede during the next season, for on it I keep quite a record of when the colony swarmed, how much honey it made, etc. After having the bees prepared as above, they are to be snugly tucked up in their chaff and sawdust cushions, at any time before the 20th of November, when most convenient, when they are to be left undisturbed till spring or placed in the cellar, according to where we winter our bees.



THOSE NAUGHTY FIVE-BANDERS AGAIN.

Possibly you would like to know how I came out on the \$5.00 golden five-banded queen I got of you last year in June. I built her up with a fine swarm, and plenty of honey. I put the strong colony into our dry cellar in October. The swarm lived till January, then all dwindled away. Thus ended my nice tender bees. No more five-banded queens for me.

Canova, S. Dak.

L. R. HILLMAN.

LIFE-MEMBERS TO UNION.

In the matter of uniting the Bee-keepers' Union with the N. A. B. K. A., I am in favor, and would have not paid \$10 to become a life-member of the latter if had not understood that it was to make me also a member for life of the Bee-keepers' Union.

O. R. COE.

Windham, N. Y., Sept. 21.

[Yes, some provision should be made by the committee to include life-members in the new organization.—Ed.]

12-FRAME LANGSTROTH HIVE.

Keep the hive question going. You remember you made for me last winter ten 12-frame hives. I have been using them with an equal number of 8 and 10 frame hives this season, and the results so far are about equal—about 70 lbs. per colony of comb honey. The 8 and 10 frames require a little more work than the 12. This has been an average season in this locality. Last year was a poor one, and all the surplus I got was from 12-frame hives. I am of the opinion that the queen is the greatest factor in the matter of surplus, all else being equal.

Bristol, Tenn. M. D. ANDES.

ALFALFA; HOW IT RESEMBLES RED CLOVER.

In the Sept. 15th issue of GLEANINGS you ask for a sample of alfalfa. I will describe it so any one can tell it. It has a stalk and leaf similar to red clover; but it is smaller, and the

blossoms extend up and down the stalk. The seed from it is in a hull that curls up like a snail; and those hulls, or pods, will extend up and down the stalk from two to four inches.

Let the hive discussion continue, by all means. I have summed it up as follows: where the honey-flow comes late in summer I think the large hives, say 10-frame L., the best. Where the honey-flow is early I should prefer the 8 frame. I have tried two 8-frame L. hives, one on top of the other, but I don't like it. It is too unhandy to work with, and doesn't do as well for comb honey as the single 8-frame.

J. A. TAYLOR.

Wynnewood, Ind. Ter., Sept. 13.

RAPE AS A HONEY-PLANT. ALSO FOR CATTLE, HOGS, AND SHEEP.

I received 1 lb. of rape seed from you last spring, and sowed perhaps a third of it on poor sandy land, and my bees just fairly swarmed on it for fully one month; and I also cut it up to feed my hogs on, and they ate it in preference to corn. I had the rape along my pasture fence, and was compelled to cut up all near the fence to prevent their reaching through to get at the rape, and my cattle were not short of pasture either. I think it is one of the best honey-plants I ever saw, not even excepting white clover. I do not know how much honey my bees gathered from rape, simply because I was running them for increase this year; and I thrashed $2\frac{1}{2}$ bushels of seed.

A QUEEN WHICH I RECEIVED FROM JOSÉPH NYSEWANDER, DES MOINES, IOWA.

Mind you, this is no ad't, for Mr. N. knows nothing of it. I received a golden queen from him, and on the 28th day of June she laid her first eggs. She was introduced to a poor miserable weak colony of bees, and she filled it up to a good colony. This is an eight-frame hive. She got so strong I feared she might swarm, so I took her and two frames of brood, and put her into a ten-frame hive, and she has also filled it and given me 28 lbs. of nice section honey. Now, if we can have such queens as this, then I say we must have larger than eight-frame hives. Perhaps I might add, that I had plenty of old combs, so they had none to build.

Cummins ville, Neb., Sept. 25. JAS. PRATT.

[We are very glad indeed to get so good a report from rape, for I have been feeling that it was a rather neglected plant. We have plenty more of the same kind of seed furnished friend P., which we can supply at the following reduced prices: 1 lb., by mail, 15 cts.; 10 lbs. or over, by freight or express, 6 cts. per lb.; 100 lbs., \$5.00. With favorable weather it will be in bloom in 30 days after it has been sown. This latter fact makes it especially valuable to put in after digging potatoes, or after other crops are taken off. It will also stand quite a little frost. On account of the above remarkable facts, it ought to be more extensively used by bee-keepers. This rape for the bees should not be confounded with the new Dwarf Essex rape. The latter is used for forage, especially

for sheep, and is usually fed or cut down before it comes into bloom.]



THE article by Mr. Langstroth, whose death is mentioned elsewhere, was written, as will be seen, some time ago; but, owing to the fact that not all the copy was received at the date, Aug. 13, and that proofs had to be sent and returned, its publication has been delayed until after the death of our lamented friend. Whether Mr. L. had already begun on his Reminiscences, so that there is some copy yet unpublished, I am not able now to state.

THE DRY-WEATHER WEED A GREAT YIELDER OF HONEY.

MR. J. C. WALLENMEYER, of Evansville, Ind., made us a short call a few days ago. He owns some 65 colonies in the region of the bayou of that place. He secures no honey from any source before the 1st of August, and that is from what is there known as "dry-weather weed." During dry seasons it yields bountifully a honey of good color and flavor; indeed, at its best it is estimated that there could not be colonies enough located in its vicinity to overstock the locality. In seasons when every thing does well by reason of rains, it does nothing, as was the case this year. By the way, Mr. Wallenmeyer has the distinction of being the composer of the sheet music entitled *Queenie Jaenette*, a waltz song. I dare not tell you out loud who "Jaenette" is; but let me whisper in your ear she is a real live person (I have seen her picture), known to Mr. W. There! I must not tell you more.

OWNING UP TO FAILURES; THE DARK AND BRIGHT SIDE OF BEE CULTURE.

SINCE the letter of J. P. Shaw was in type, the following has come to hand:

Could not your pleasant tactics of showing up the good and praiseworthy be applied to Mr. Dosch's letter, page 737? Thousands all over the land say amen to what he says about the weather, etc.; and does it not take more courage and independence of character to own up to failure than to report success that is often only a streak of good luck? It is a consolation, too, for us unprosperous ones to know that there are more in the same boat with us.

Davenport, Ia.

A. GREER.

We do intend to give both sides a fair showing, especially the darker one; indeed, we do not publish by a long way all the favorable testimony we receive; and, on the other hand, we have tried to give space to *every thing* that is really discouraging, and which should be properly set before our readers. In evidence, see "Reports Discouraging" we have always

published at the proper season of the year. Years ago we used to have a department we used to call "Blasted Hopes." The trouble is, as you intimate, more with *bee-keepers* themselves who are too much chagrined to write than with the publishers. It is far easier to tell of our successes than our failures. But, say; is it not quite possible that friend Dosch made his picture overdark? See the favorable report in this issue by J. P. Shaw, on page 770, a man who lives only three miles from him.

QUEENS LAYING IN TWO STORIES.

I DID not notice that the article by Dr. Miller, on page 740, last issue, required a footnote until after the form had gone to press, so I shall now say what I should then have said.

When running for extracted honey I have had no trouble in getting the queen to occupy the second story, because, when she was crowded for room in the lower set, I simply took therefrom two or more frames and put them above, filling the space now made below with empty combs or frames of foundation. With the brood above, the queen, after filling the combs put in below, would go above. I have had as many as fourteen frames more or less filled with brood, and it was quite a common thing to have a dozen. When I had fourteen such frames I generally added a third story; and in this as well as in the combs of the second story not filled by the queen I got extracted honey—much more in proportion than from colonies having two stories and the queen confined wholly to the lower hive by perforated metal. What was more, those three-story hummers—for such they were for honey—never swarmed.

In running for comb honey the case is so different that I think I should try to confine the queen to the lower story; and whether, in the light of facts recently presented, I should want that brood-nest eight or ten, I can not say; though on account of the convenience of the eight-frame size I think I should prefer it. Taking it all in all I still prefer that size for both comb and extracted. For the latter it is large enough when tiered up; and in the case of the former it has and probably will give forth its tons of honey as before.

As to shallow brood-nests, all I can say of them is that I do and do not like them. From my present knowledge and experience I can not think that wide or deep top-bars are adapted to them. If, in order to use shallow brood-chambers, we must have narrow and thin top-bars with their attendant burr-combs—well, I *think* I should prefer to use something else, even if we were *sure* it were an advantage to use them.

DEATH OF REV. L. L. LANGSTROTH.

A COUPLE of numbers ago I announced that Mr. Langstroth's health had so far improved that he was in position to complete his series of

reminiscences, which had to be cut off owing to that distressing head trouble that has afflicted him for years; and only a few days before, a letter had come from Mr. L. stating that he was just about to begin on them. It was with much surprise and sorrow that we learned, on the 7th, that father Langstroth had died suddenly in the Wayne Ave. Presbyterian Church, about 11 o'clock on the 6th, while assisting the pastor, Rev. Amos O. Raber. The newspapers next morning contained quite extended accounts, and clippings from a couple of them were forwarded on to us at once; but knowing such accounts were not always quite reliable I wrote to Mrs. Cowan (Mr. Langstroth's daughter), saying that I hoped her heart would not be too full to give us further particulars. Below is her reply, giving the touching details of her father's death:

*Mr. E. R. Root—Dear friend:—*I can hardly tell you whether my heart is fuller to-day of sorrow for the loss of my dear father or of joy as I think of his blessed entrance into the land where "there shall be no more death, neither sorrow nor crying, neither shall there be any more pain, for the former things are passed away."

I can give you only a brief account of my father's last days. When asked, the Sabbath previous to his release, by our pastor whether he felt able to make the address at our communion service, he replied, "I shall be most happy to do so," adding, in response to the assurance that, if he did not feel able for it when the time came, he could be relieved, "Oh! I shall be able—it will be a joy to me, Mr. Raber. I am so glad you asked me!" He had been very bright and happy ever since his return from Toronto; but last week he took a heavy cold, and was much oppressed with it; and during the last few days he lost strength so rapidly, and seemed so feeble, that I wished him to notify our pastor not to depend upon his assistance on Sabbath. He was, however, confident that he could carry out his part in the services, and was so anxious to do so that I could not insist.

On Sabbath morning he was unusually bright, and overflowing with happiness and gratitude to the Lord for his blessings. My eldest son, with his wife and baby, had been spending a week with us, and he was much pleased with, and proud of, his little great-granddaughter. He asked her mother that morning to wheel her little carriage into his warm room, and I shall not soon forget how happy he looked as he sat beside it, talking to and caressing the little one. They were at the church.

After dressing, father seemed much fatigued, and I again asked him whether he thought it were best for him to try to preach. He replied, "Oh, yes! I will say a few words, and then I will come home and rest, rest, rest." He is most certainly "at rest with the Lord."

Before preaching, Rev. Amos O. Raber moved the pulpit to one side and placed a chair on the front of the platform. Father began to address the audience, sitting, with some explanatory remarks as to his weakness. After a few introductory sentences requesting the prayers of the congregation for himself and the service, he said: "I am a firm believer in prayer. It is of the love of God that I wish to speak to you this morning—what it has been, what it is, what it means to us, and what we ought—" As he finished the last word he hesitated; his form straightened out convulsively; his head fell backward, and in about three minutes he was "absent from the body, at home with the Lord."

There was no scene of confusion in the church. Tears were running down every cheek, but there were no screams, no loud sobbing. As one person remarked, "Heaven never seemed so near before; it seemed but a step."

"Then, with no fiery throbbing pain,

No slow gradations of decay,

Death broke at once the vital chain

And freed his soul the nearest way."

Sincerely yours,

Dayton, O., Oct. 8.

ANNA L. COWAN.

A. I. ROOT'S PERSONAL* RECOLLECTIONS OF THE
REV. L. L. LANGSTROTH.

In the Introduction to our A B C book you will find some mention of the incidents of my first acquaintance with the honey-bee. During the whole of my busy life, perhaps no other hobby has been pursued with the zeal and keen enjoyment that my acquaintance with the honey-bees has. It seemed for a time as if a new world were opening before me. After I had questioned again and again everybody who kept bees, or knew any thing about them in our neighborhood, I began impatiently ransacking books and periodicals. The more I found, the more I thirsted for deeper knowledge. I took a trip to Cleveland, principally to overhaul the bookstores for works on bees; but I did not dare to tell even the members of my own family that I was taking such a trip by stage-coach (for it was away back in the days of stage-coaches, before our railway was built), just to satisfy my thirst and curiosity in this direction. I remember well how the book-keeper pulled down his volumes one after another, rapped the dust off, and began extolling their special merits. It did not take me many minutes to decide that Langstroth's book was *the* book. I was obliged to stay over night at the hotel, for the stage made only one trip daily. I read and read, away into the night; and it was during that night I commenced my acquaintance with the Rev. L. L. Langstroth. He told me just what I wanted to know. My craze was not (certainly not at that time) to make money, but rather to know more about God's wonderful gifts—these strange and *curiously* wonderful gifts which he has provided for the children of men. I did not look at it then just as I do now; that is, I am sorry that, in those earlier days, I did not recognize the Almighty as a loving father. But Langstroth's book helped me a great deal, right in the line where I sorely needed help. His wonderfully genial, friendly, and sociable way of telling things enlisted my sympathies at once.

I told you I was not studying then for the *money* there was in it. Langstroth never wrote about bees or did any thing else because of the *money* there was in it. Through all his busy life, he, at least at times, seemed strangely oblivious of the *financial* part. More of this anon.

After I arrived home it did not take me long to find out whether Langstroth was still living. I made the acquaintance, by letter, of Samuel Wagner; got hold of Vol. I. of the *American Bee Journal*. By the way, I wonder whether there is anybody living now who will enjoy reading the first edition of Langstroth and the first volume of the *American Bee Journal* as I enjoyed it then. Why, the very thought of

* We hope to have personal recollections and historical incidents from a number of other writers, on Langstroth, in our issue for Dec. 1st or 15th. Announcements will be made later.—Ed.

those old days of enthusiasm makes the blood even now tingle to my fingers' ends.

As soon as I found that Mr. Langstroth was living at Oxford, Butler Co., O., I commenced correspondence. Then I wanted the best queen-bee to start with that the world afforded. It was pretty well along in the fall, but I could not wait till spring, as some of my friends advised me to do. I soon learned to look up to friend Langstroth with such confidence and respect that I greedily read again and again every word I could find from his pen—even his advertisements and circular in regard to Italian bees. When the book was read through once I read it again. Then I read certain chapters over and over; and when summer time came again, and I had little miniature hives or nuclei under almost every fruit-tree in our spacious dooryard, each little hive containing a daughter of that \$20 queen, then I read Langstroth's book with still more avidity and eagerness, finding new truths and suggestions in it each time.

I think I met him first and heard him talk at a convention in Cincinnati. He was a wonderful talker as well as writer—one of the most genial, good-natured, benevolent men the world has ever produced. He was a poet, a sage, a philosopher, and a humanitarian, all in one, and, best of all, a most devoted and humble follower of the Lord Jesus Christ. His fund of anecdotes and pleasant memories and incidents was beyond that of any other man I ever met; and his rare education and scholarly accomplishments but added to it all. No one I ever saw could tell a story as he would tell it. A vein of humor and good-natured pleasantry seemed to run through it all. I think he enjoyed telling stories—especially stories with good morals; and they all *had* to have a good moral or they could not come from L. L. Langstroth. Not only the play of his benevolent face and the twinkle of his eye, but the motion of his hands as he gave emphasis to the different points in his narration, showed how thoroughly he entered into his topic.

It was my good fortune to listen to him one or more times from the pulpit. He preached to us once here in Medina. The church was full, but I hardly believe any one else in that large audience enjoyed his talk as I did. They did not *know* him as I did.

You must not think from what I have said that our good friend always agreed with every one else. He had opinions of his own, and he could be stubborn and almost contrary when he got "hot" in a discussion. But the gentle spirit was back of it all. I remember once of being out in the apiary, explaining to him some wonderful improvement I had just been working out. He, however, did not see it as I did, and stoutly maintained that the old way—his way, in fact—was better. All at once I stopped

and concluded we had better give up the subject. Pretty soon he laid his hand on my arm, and said:

"Friend Root, will you not forgive me? I was rude and uncourteous. You have practiced this thing, and are succeeding. Very likely you are right and I am wrong."

Now, friends, how many times in this world of ours do you meet a man with a spirit like that? Once or twice I have knelt with him in prayer. Sometimes we have prayed together in regard to differences among bee-keepers; and I have always been struck with his remarkable gift in prayer. It seemed as though he were pleading with some dear friend, when he addressed his Maker.

His last public talk to bee-keepers, if I am correct, was the one given at Toronto; and I felt anxious at the time that some shorthand reporter might be at hand who could give all his words, and even his little stories, just as he gave them to us then. Perhaps others did not enjoy this talk as I did, because they did not know him as I did. Why, that history of long ago, telling of the troubles, blunders, and mistakes in introducing the Italian bees from Italy to America, should be handed down to coming generations. It should be embodied in some of the standard works on bees, in order to secure its preservation.

Langstroth and Quinby—those two old pioneers—have now both passed away, but "their works *do* live after them," and shall live for a thousand years or more. I feel anxious that the first edition of both Langstroth and Quinby should be preserved. There is something to me more interesting in their first efforts—Quinby's book, for instance, telling how to keep bees with a box hive, and Langstroth telling his first experiments with the movable-frame hive. Those early editions should be preserved; also the early volumes of the *American Bee Journal*, containing the writings of these two great benefactors of the world.

When quite a child I was greatly interested in reading the life of Benjamin Franklin. When I first became acquainted with Langstroth I could not resist the suggestion that he was much like Franklin. The maxims of Poor Richard suggest the thought. Mr. Langstroth was remarkably well read in ancient literature. He was familiar with the writings of great men in all the ages. It rejoices my heart now to know that he has been remembered for many years at our national conventions, and to know that he was even present with his daughter at the one that occurred so short a time before his death. He never seemed to have a faculty for accumulating property; but what is *millions* of money compared to the grateful remembrance with which Langstroth's name will be spoken in every civilized land on the face of the earth?



ON THE WHEEL.

My weight has finally been reduced to 110 lbs. To test the matter in regard to whether one loses strength by a corresponding loss of flesh, I decided to take a wheelride on the morning of Sept. 21—the hot Saturday you remember so much has been said about in the papers. After eating a whole pound of sirloin steak as a starter I rode 32 miles, perhaps easier than I ever did it before. There is certainly a big advantage in reduced weight for wheel-riding, although it may not be as true for different kinds of hard work. I now weigh from 20 to 25 lbs. less than my ordinary weight. Sometimes in doing errands it becomes necessary for me to carry some 10 or 20 lbs. on my wheel, and I find it makes a vast difference when I finish my errand and leave my burden. Now, is it not possible that thousands of people are carrying around with them day by day a useless amount of avoirdupois? I do not refer especially to those people who are over-fat. My normal weight is from 130 to 135; and I confess I find it a great relief, especially on a hot day, to feel that I am 20 or 25 lbs. lighter, and yet no loss of strength and energy. By the way, is there any better way of reducing flesh than by the Salisbury treatment?

A few days later I started out to visit friend Gault. I wanted to see his raspberries during the last of September. The Weather Bureau said "fair weather;" but the barometer said "rain." I had my work all fixed, and I was in just the mood for a wheelride; so I started out in defiance of the barometer. I made eight or ten miles very easily, and with much enjoyment. Then it commenced to sprinkle; but as it did not sprinkle enough to make the dust stick to the rubber rims, and as I had on some very light thin clothing, I kept on in the rain. The rain was at first a sort of camp mist. But it kept getting wetter and wetter. Pretty soon I experienced the delicious sensation I have mentioned before, of breathing great breaths of water-laden air. I wonder if anybody else has enjoyed this while riding the wheel. It is much like drinking when you are thirsty, but you drink through the lungs. I enjoyed it so much that I kept on until I was pretty well wet through. Catch cold? Not a bit of it. When you weigh only 110 lbs., and your muscles are all solid lean meat, something like dried beef, perhaps, you can not very well catch cold. I kept on enjoying it more and more until finally the roads began to be too soft for wheeling. Then I was obliged to invade a little home by the wayside. I was permitted to help myself from a tea-kettle of hot water on the stove. Then I talked with the six-months-old baby, and got acquainted with the rest of the household, and put in an hour until the rain stopped, very pleasantly. By getting over to the nearest station I reached New London after 9 o'clock at night; but as the rain had spoiled the wheeling I got up at five o'clock and found the way over to our friend Dan White's just as the hired man was getting out of the back door. As soon as Mr. White was informed that A. I. Root was on the premises he hustled on his clothing quickly, making some apologies for getting up so late on a rainy morning. After we had shaken hands and talked over matters a little he commenced:

"O Mr. Root! You are just in time to see the

neatest thing in the way of a strawberry-patch there is out. Just come this way."

If our readers will now turn back to page 71, Jan. 15, they will find some diagrams in regard to setting out strawberry plants. Well, friend White's patch was a modification of this idea. In the first place, he marks out his ground in the spring of the year so as to put, the rows 4 feet apart; then the plants are carefully set 18 inches apart in the row. As soon as they send out runners, one new plant is made to grow half way between the original plants. That leaves them 9 inches from center to center. Now the next step is to put a plant 9 inches off on each side of every plant in the row. The diagram below will make it plain. The large stars are the original plants, and the small ones where the runners are put down.

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DAN WHITE'S SYSTEM OF GROWING STRAW-BERRIES.

You will notice that the above arrangement makes the plants 9 inches apart from center to center; each old plant is to furnish three young ones. The row of plants is 18 inches wide, the path $2\frac{1}{2}$ feet wide. Well, after you get these three rows, plants 9 inches apart, then you are to pull off every runner. Go over the ground so often that not a weed gets a start, and not another plant gets a start except the three rows as given above. The effect is to make each plant, by the time frost comes, a strong bunchy cluster. It is several years since we first practiced taking off all the runners so as to get strong bushy plants; but I am firmly convinced that in no other way can we get such large fine berries.

The next question is, What variety shall we use? Dan White's model strawberry-patch is Gandys—nothing else. You know there has been a complaint that the Gandy does not bear very much. Some large strong plants, for instance, will not bear a single berry—at least, not the first season. Well, friend W. says it is because the plant has not grown to a sufficient size. He says if you take the first Gandy runners that set in June or July, give them good cultivation, and stop off all the other runners, you will get a plant by fall big enough to give a good crop of fruit next year, and I believe he is right. Our Gandys always did better the second season from planting.

This patch of strawberries on friend White's premises is, I believe, the handsomest, and the most of a model patch, of any thing I ever saw anywhere, unless it is those of Henry Young, Ada, O., that I looked at last winter. There are absolutely no weeds in it. There was a plant wherever there should be one, and no extras. And I tell you, friends, it is a grand thing to have a full stand in raising any crop. This reminds me that I forgot to say that T. B. Terry's potato-fields were absolutely a full stand. There were no missing hills—at least, I did not see any. But his planting was all done by hand. Since digging his Freemans he tells me that, on his best ground, they ran as high as 195 bushels per acre. Now, for the season we have had, especially the severe drouth in his locality, and for a potato of such *fine quality* as the Freeman, this is certainly doing pretty well, especially where a whole farm, as it were, is planted to potatoes. But, to come back to friend White's.

It is a big lot of work to set each runner in place by hand, and to pinch off all the superfluous runners. But, there is no excellence

without great labor. Friend W. had a large crop of strawberries during the past season, and sold them all at extra prices. Three or four cents more per quart for your berries will easily pay for the extra labor; and when you get right down to it, a good many times it is about as cheap to do any thing *right* as to let it go, or to get out the weeds by fits and starts after they have done a big lot of damage. He placed his berries right in the market, side by side with other berries that were selling at 5 and 6 cents. When the dealers protested about his asking 10 and 12 for his he replied:

"You need not buy them at all, my friend, unless you have a mind to. Set them right out here on the walk, put a tag on them, stating the price, and I will allow you a commission for selling."

If the above conversation took place on the sidewalk, where it usually does, about this time somebody going by wanted some of the berries. Then somebody else wanted some more; and pretty soon the dealer says, "Here, Mr. White, I will take them at your price." Now, this is the same thing Terry describes in his strawberry-book. It can be done every time when you have something away ahead of the general run in the market. Terry accomplished the matter of getting his plants so as to give each one plenty of room, by cutting out the surplus plants in the fall. Friend White's plan is more work, but I think it is a little ahead, because the surplus plants are out before they get started. And then, what a pleasure to show to your friends—I do not mean the berries—I mean the plants and the strawberry-garden! I should judge friend W. has something like a quarter of an acre close by his dwelling, managed on this high-pressure principle.

While breakfast was being prepared, a fine horse was quickly put in the buggy, and we went half a mile back through his raspberry-plantation. They are managed a good deal as he managed his strawberries—that is, the greater part of them—and they are certainly a sight to behold. The ground is nicely tiled, and it is just the kind of sandy loam that berries revel in. Sure enough, there were two rows of the Gault raspberries; but the demand for plants was so great the blossom-buds had all been picked off, and the tips were down in the ground. Yes, and his plants were all sold before they were fairly well rooted, even though he should have a couple of thousand. That is the way to do business, friends—make your product of such a grade that it is sold before it is ready to take out of the ground.

On the way back we passed a field of Stowell's Evergreen sweet corn that so took my fancy I engaged then and there ten bushels of shelled corn for seed.

"Breakfast is ready!" As friend White's oldest boy, Ford White, is under training for bicycle-riding—that is, a sort of home training—he kindly shared his nice beefsteak with me, so I came out all right, even if I was driven off my route by the rain. Then friend W. and I were off for friend Gault's plantation, seven miles away. But, lo and behold! just as we were crossing the railway, our genial friend Gault was seen coming for us with great strides. He was on his way to the Elyria fair, with a basket of Gault raspberries to be exhibited; and so I did not reach his plantation at all that day, but made him turn round and go to the fair, even though he protested somewhat.

Two things at Elyria attracted my attention especially. One was the great show of potatoes, including almost every variety of any note. In fact, there were potatoes enough to fill the vegetable department to the exclusion of all

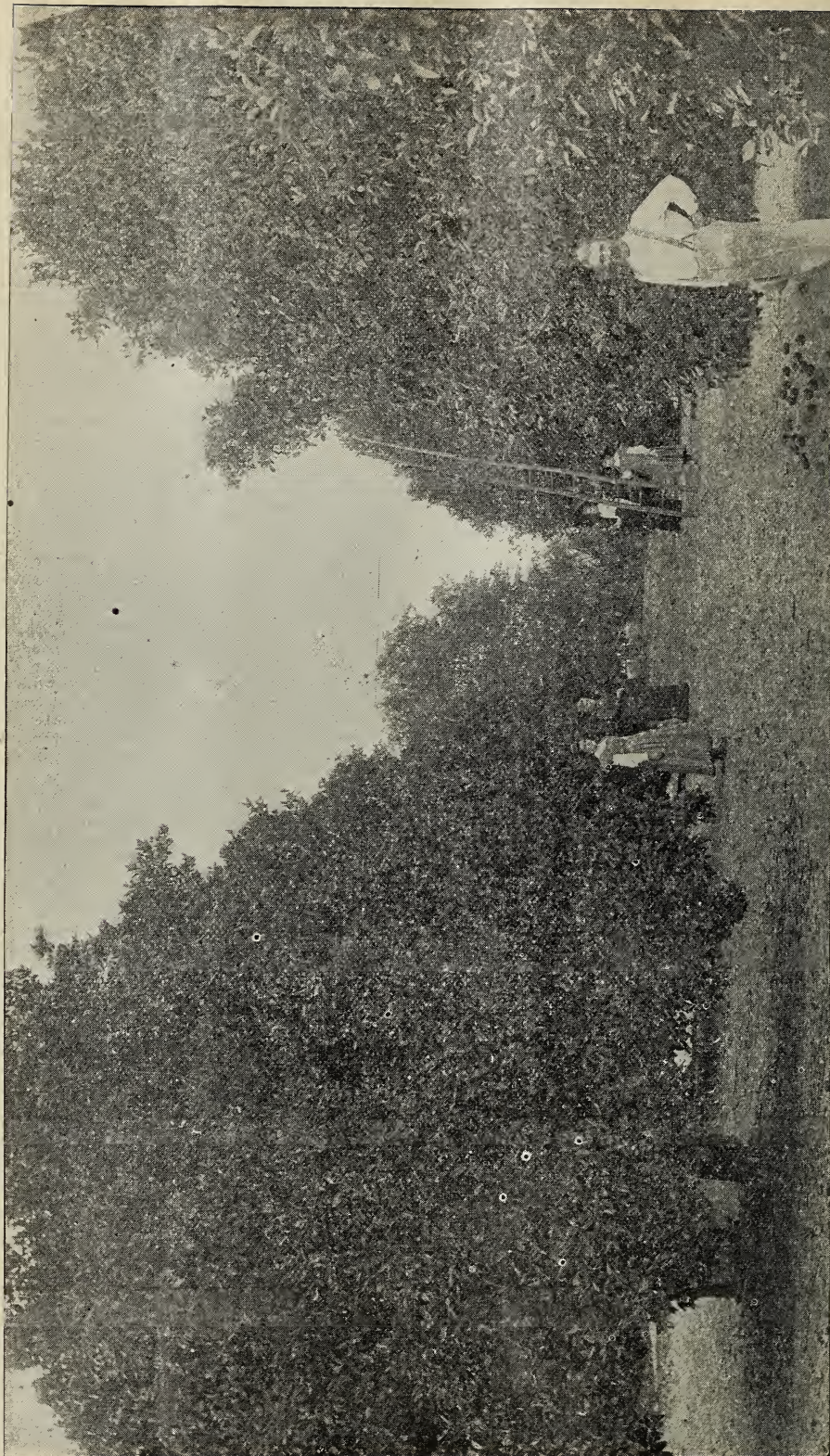
else, and they had to fix a sort of "annex" for them outdoors. The other thing that attracted my attention—well, it did not just exactly attract *my* attention, after all, so much as it seemed to call the attention of the crowd in general. It was not the big potatoes nor the big squashes, nor friend Gault's show of raspberries toward the first of October; but it was a great lot of establishments for games of skill and chance—throwing a ball at a doll-baby, with a cigar for a prize; shooting at the mark, and other things that ran so near gambling the sight was any thing but inspiring to me. Why should the gambling-mania and rural industries be thus linked together hand in hand, as it were, at our county fairs? By the way, I wonder if there is any sort of *diet*, or any sort of wholesome food and drink, that we could furnish to our boys and girls to discourage this disposition toward the *gambling-mania*. No doubt these fellows make money or they would not work so hard to call people to their respective places. They evidently get a pretty big harvest of nickels or they could not afford to pay the fair-managers so big a sum for the small amount of space they occupy. By the way, where do our farmers' boys and girls get so many nickels, anyhow, for popcorn, candy, games of chance, etc., if it is true that "farming doesn't pay"?

On a later day, when it did not rain, my wheel and I managed to reach friend Gault's; but it was only after there had been frost enough to "cook" (at least partially) the Gault raspberries. But a small part of friend Gault's plantation is allowed to bear fruit, because the demand for plants is so great. We found stacks of great clusters of berries, picked and brought into the house before the freeze, some only half ripe, and a good many more on the bushes, that had been covered with old sacks, blankets, etc. Surely, no other raspberry ever bore its fruit in such tremendous great heavy clusters and bunches. I think one single shoot contained, by actual count, 248 berries; and there was any quantity of them having from 50 to 100. On the old plantation there were single branches lying flat on the ground. In fact, the Gault raspberry is almost sure to lie flat on the ground, through its weight of fruit, unless it is tied up or supported in some way. Although we have some very large fine bunches on our grounds, our plants have not as yet shown as much disposition to fruit heavily as they do on the grounds of the originator. Of course, the frost last spring made havoc with the fruit in every locality. When it comes to raising fruit for the market, these great bunches must be supported in some way, or tied up, or they will be in a worse plight from the effects of mud and sand than even strawberries.

It is really worth while to see friend Gault exhibit his berries at a county fair, and notice the animation with which he answers questions, and explains to everybody his new raspberry. I presume he could take a large number of orders for plants, to be sent out this fall; and I fear that nurserymen *generally* will not be as conscientious as he is in advising everybody to wait until spring, and not undertake fall planting with the Gault raspberry.

FLORIDA TRAVELS.

Just here it occurs to me that several items in regard to our Florida trip were not taken in their proper order. This is not very strange, as it is now several months since I made that pleasant trip. In writing up Silver Spring in our last issue I omitted to say that it was my good fortune to be present when the steamers both came in with their merry crowd of laugh-



A FLORIDA ORANGE-GROVE IN FULL BEARING, SHOWING HOW THE PROPRIETOR LOOKS WHEN HE IS HARVESTING A BIG CROP, AND PRICES ARE GOOD.

ing passengers. After the water had become quieted, and as the boats stood there for some little time, I went out on one of them and looked over its edge into the water, straight down where the pool is perhaps deepest. The water is so clear it really made one dizzy—straight down 85 feet into a liquid that is brighter and clearer, or at least it seemed to me so, than even the air itself. It made one feel strangely. When two steamers start out there is generally a little rivalry to see which will get away first and get into the narrow channel higher up. Upon the arrival of the steamers the alligators perched along the banks and by the roots of trees (like a lot of frogs and snapping-turtles) make a sudden plunge into the bright water. It was my good fortune to see four good-sized ones popping their heads up after the water had stilled down a little. Getting a glimpse of the 'gators, especially the large ones, before they are disturbed and tumble in, is one of the exciting sights for passengers down the Ocklawaha River.

In the vicinity of Silver Spring there are many sink-holes or cavities in the earth, such as I mentioned in Missouri. And, by the way, are not these found more or less in all localities where great springs and artesian wells are prevalent? On my way back to Ocala, the stage-driver told me there was a spot a few miles out of town where a horse broke through on the level ground. His rider managed to grasp the crust of earth and thus saved himself before the horse went down clear out of sight. As he was a valuable one, however, the neighbors rallied; and as they could hear his breathing from the depths below they set to work and dug him out—or, at least, made a sloping path so that, by the assistance of ropes, they enabled him to climb out himself.

On my trip back from Ocala to Palatka my curiosity was greatly stirred up by the kaolin-factories. This kaolin is manufactured from a species of clay found in different parts of Florida. It is used in the manufacture of fine china and earthen ware. The factories are quite extensive, and the process is, I judge, somewhat complicated. They seem to employ a good many men, and are doing a large business. I wish some of the Florida friends would write up briefly this matter of kaolin.

At Palatka there was a great crowd at the station, as several trains leave about the same time in the afternoon and evening. Of course, they have railroad officials appointed to answer questions and tell people where to go. But these men are asked so many questions and (oftentimes so many foolish ones, perhaps), that they sometimes get crusty and uncivil. You know how it is, friends. They will answer your question in as few words as possible, and look the other way while talking. Well, I was greatly pleased to see a pleasant-looking middle-aged colored woman on the platform, and she was kept very busy indeed, showing people what train to take, taking them by the hand, if need be, and pulling them through the crowd to show them in that union depot where to get a ticket, what train to get on, etc. I had already an excursion ticket, but it obliged me to go around by St. Augustine, which would delay me another day in getting to Jacksonville. This woman helped me to get on the right train just starting out, that would reach Jacksonville that night; and the additional expense was little if any more than my board and lodging would be if I had waited till another day. Now, some of you may make fun of me, perhaps, when I say that colored people have a remarkable fund of patience in answering cheerfully and good-naturedly all the questions

you may put to them. This woman was smart and bright, and evidently knew all about the railroad machinery of travel as well as any of the men. I do not know who pays her for her time; but very likely it is the railroad companies. But with such a stream of humanity, many of them tired women with children, perhaps crying babies, this bright cheerful woman was surely a ministering angel, even if she was black.

In reaching Green Cove Springs, mentioned in my last, I took the steamer from Jacksonville. Well, somewhere in the vicinity of Magnolia Springs I saw cows wading away out into the St. Johns River, and actually eating grass or something else, with their heads entirely under water. At first I thought them some strange sea-monster. I did not know but it was the gennine manatee, or sea-cow, found in the Indian River, away down in the vicinity of Potsdam, where friend Poppleton lives. Somebody has since told me that I must be mistaken, for a cow can not live with her head under water. But I tell you she can live and does live with her head entirely under water, and out of sight, for a good many minutes. I think I saw half a dozen or more with not a head of one of them in sight, and their huge bodies were more than half under water at that. They had evidently learned the trade by long practice. I do not know what sort of forage it is that grows at the bottom of the St. Johns River; but I think it would be a splendid thing to cultivate, especially during dry seasons. Will somebody who lives down that way tell me more about it? I also omitted to say that that wonderful Green Cove Spring sends out 5000 gallons of shining water every minute.

When I was down at Mt. Dora lamenting that I could not see those great orange-trees in full leaf, somebody—it may have been my good friend Nellie Adams—said:

"Oh! yes, you can, Mr. Root. Here is a picture that will show you just how they look."

The man in the foreground may have been her brother; but it is really so long ago I can not remember, and I neglected to mark it on the back of the photograph. Whoever the person is, I am afraid his smiling face got a damper after the terrible frosts of last winter. Maybe he has by this time got so as to look good-natured and happy again. I hope so. Some people have but little idea of the immense size to which orange-trees grow in a favored locality.

OUR HOMES.

Create in me a clean heart, and renew a right spirit within me.—PSALM 51:10.

I have before alluded to the fact—a wonderful fact it is to me—that, by a certain course of diet, one is free from the cravings for intoxicants and stimulants, or even a craving for what are called "temperance drinks." I still enjoy the hot water, and still prefer it to any other beverage the world can furnish. In fact, I am now using hot water at my meals, instead of the tea the doctor permitted me to have. I do not need the tea, and I do not want it. The water is nicer. Of course, with the large quantity of water drank in the middle of the forenoon and middle of the afternoon, very little liquid is wanted at mealtimes, and that is all the better.

Now I hope our readers will pardon me for touching upon another point—a point that is seldom talked about in print, but one that has very much to do, not only with the morals of

our people at large, but still further in regard to the matter of suppressing crime. We have been told by eminent physicians and clergymen that sexual vices may be productive of more evil in this world of ours than even a taste for intoxicants. The older readers of GLEANINGS will remember that I have at different times alluded to my own temptations in this line, especially during my early life. I have prayed long and earnestly over the matter since I became a Christian, and have many times wondered if it were not my "thorn in the flesh" that God thought best not to remove, but to give me grace to bear. Through correspondence and through personal intercourse in my travels and during my wheelrids, I have found many another good brother who has confessed to me his trials along this very line. It is, without question, one of Satan's greatest weapons; and it is a work that he carries on, not only among the lower classes, but it comes clear up through all grades of society. We have but to glance over the newspapers and notice the startling accounts of crime, often revealing the fall of those who stood in high places. Well, there is a remedy. One who secures perfect and complete digestion not only finds himself free from unnatural cravings in the line of beverages, but this strange, restless, uneasy feeling that comes of itself, many times so unexpectedly—these phantoms of the imagination that we all ought to be ashamed of, and many of us are ashamed of every day of our lives—these, too, give way and disappear when the blood flows evenly through the veins, without being disturbed or wrought up by a disordered digestion and consequent unnatural cravings.

It would seem as if a great part of the crime abroad in the world were the result, not alone of a bad state of the heart, but as a consequence of the bad state of the *stomach and intestines*. Over-eating has for ages been recognized as a promulgator of unnatural longings and consequent crime. Now, it is not only over-eating and over-drinking, but I am satisfied it is the wrong *kind* of eating and wrong kind of drinking that pave the way for Satan's work.

Some little time ago I quoted to you a part of a talk from Anthony Comstock in regard to "evil imaginations;" and I have wondered why God permitted good men—devout, Christian men—to be haunted with imaginations that evidently must come from the evil one himself; yea, verily it seems at times as if they must come from the bottomless pit. I have prayed over the matter, and answer seems to have come with the prayer. For many weeks I have been entirely free from any thing of the sort. Pardon me if I be frank enough to tell you that, for the first time in almost *fifty years*, I have enjoyed perfect freedom and *immunity* from suggestions of the imagination that I should be ashamed to have my wife, mother, or grown-up daughters know all about: that is, if they could read my very thoughts for the past few weeks there would be nothing in that line to be ashamed of or to fear to have them see. Now, from my acquaintance with *mankind* I know that this is, at least as a rule, something remarkable. In a recent issue I suggested that wholesome digestion might be more than the Keeley cure has ever *claimed* to be, in the way of preventing intemperance. It would stop the mischief at the fountain-head. I ought to say more—that perfect natural digestion, such as God intended we should have—would stop at the fountain-head this other twin evil, or twin demon, of the evil one. It would be a most perfect cure for licentiousness. No, you need not be afraid that there would not be *people*

enough born into the world. We might have a less number, but we should have a better sort of people. What there would be lacking in *quantity* would be made up in *quality*. There is many a man so honest in dollars and cents that he is never tempted to touch, or even *covet* the gold that belongs to his neighbor and not to himself. So far as money or property is concerned, he could live up to the golden rule; but when it comes to that part of the tenth commandment where he is commanded not to covet his neighbor's wife nor maid-servant, it may be a different thing with that person. When a man can look upon all womankind as he would upon the daughters of his own household, then he may be said to be truly born again. He is a child of the new birth; and I am firmly convinced that so simple and prosy a matter as the choice of his food and drink may prove to be a great factor in perfect emancipation from this form of evil. This thing *alone* may lift him from the "house of bondage."

There seems to be an impression very widespread, that the use of meat as a diet tends to develop the animal passions. This may possibly be true when taken with large quantities of vegetable food, sweets, etc. But it certainly is not true on an exclusively lean-meat diet. It can not be that meat conduces to the accumulation of flesh or fat, for the Salisbury patients invariably lose flesh for at least quite a time, say perhaps for several months. And, by the way, it seems that, where it is desirable to reduce one's weight, there can be no safer or simpler remedy than the lean-meat diet. If it is not meat, then, that makes people fat and heavy, and develops the coarse animal nature, to what part of our food should we attribute this result? After having given the matter considerable thought, my impression is that the excessive use of sugar or other sweets has much to do with it. On page 711 I quoted from Prof. Atwater in one of the United States Agricultural Reports. Let me quote again, for I think a part of one of the quotations will *bear* repeating:

We consume relatively too much of the fuel ingredients of food—those which are burned in the body and yield heat and muscular power. Such are the fats of meat and butter, the starch which makes up the larger part of the nutritive material of flour, potatoes, and sugar, of which such enormous quantities are eaten in the United States.

Please notice the concluding sentence. Statistics have told us again and again that the consumption of sugar, especially the amount per individual, is constantly on the increase. The low price of sugar has probably had much to do with it, and a fondness for sweet things. It is not only at meal-times; but our ice-cream soda-fountains, our temperance or summer drinks, are largely composed of syrups, and everybody seems to want them as sweet as possible. On the fairgrounds during this season of the year, great quantities of sugar are used in making different kinds of cream candy. I have many times wondered why people would shower down their nickels for a little piece of hot melted sugar, when a moment's reflection should tell them that the nickel would buy ever so much more pure sugar right at any corner grocery. There is plenty of sugar in the sugar-bowls at home, to be used at meal-times; yet all through the day our children are spoiling their teeth, spoiling their digestion, and may be spoiling their moral and spiritual natures, by this excessive use of sweets. Prof. Atwater may well say, "In such enormous quantities." Of course, sugar has its use as an article of food; but after being without a particle of it for many weeks, I experienced no particular inconvenience. On tasting a little a few days ago, by experiment,

I was surprised to find that I had to a considerable extent lost my taste for it; and I must think it is a good deal an acquired taste. If I am correct, starch and sugar are at the bottom of half the dyspepsia and indigestion that afflict our American people. In fact, the Salisbury treatment is largely based on feeding the patient on something that contains not a particle of either *starch* or *sugar*. This is not a new idea by any means. In diabetes, and perhaps other diseases, the patient is obliged to guard against articles of food containing starch and sugar as he would guard against poison. Our good friend Dr. Jesse Oren, at Daytona, Fla., told me that for many years he had been obliged to practice this sort of diet. He has a sort of bread or cracker called gluten cracker, I think, which contains no starch, and, of course, he subsists largely on lean meat, as I do. Now, when it becomes apparent, or seems to become apparent, that it is not only a damage to our physical natures, but a damage to our moral and spiritual natures as well, does it not behoove us to look after these things?

Many times we hear people speak about avoiding meat for supper, or just before they go to bed. For years past I have been obliged to be careful about eating fruit, pies, or cake very near my bedtime. But for more than 25 years I have been aware that I could eat lean meat for a late supper just before going to bed, without having my rest at night disturbed a particle. Now, then, friends, when we use that oft-repeated prayer, "Create in me a clean heart, O God, and renew a right spirit within me"—and I hope the thousands of our readers have been using that prayer for years past as I have used it—when we take these sacred words on our lips, does it not behoove us to be careful of our diet? In our recent Bible readings in the Old Testament I have been struck again and again with the fact that the patriarchs in olden times, in an age when men lived to be from 500 to 1000 years old, nearly all had their large flocks and herds; and their sheep and oxen were counted by the hundreds and thousands; and on feast-days it would seem, indeed, from the accounts of the number of animals used for a feast, that they must have been largely a *meat-eating* people. We do not read much about sugar and candy in those olden times. In fact, milk and honey seem to have been the nearest approach to it; and if we were using milk and honey now (instead of sugar at 4 or 5 cents a pound), with meat in the quantities evidently consumed away back in the childhood of humanity, who knows but that we might live and hold our strength and vigor for a hundred years or more?

For years past, Mrs. Root has constantly urged me, especially when my health was poor, to eat *more* lean meat and less of other things. But some way, after indulging in sweets and fruits I would get a dislike for meat, and oftentimes give it up altogether until I was obliged to call a halt. Dear reader, if you are afflicted with poor health along the lines I have indicated, just try for a little time using more lean meat and less of sugar and starch, and see if I am not right. You may urge the matter of expense; but the dearest "feed" that anybody can find is that given by doctors, and bought at the drugstore. And, by the way, poor people, and those in moderate circumstances, a great many times employ the doctor a great deal more than the rich. Is this not true? People who are too poor to pay a doctor, and, in fact, never *do* pay him, oftentimes are the ones who are wanting the doctor continually.

Right here it would seem quite fitting that I should give some extracts from a letter just re-

ceived from my old friend and physician, Dr. J. H. Salisbury, the originator and discoverer, if I am correct, of the system of treating disease, that has received his name, not only throughout England and America, but almost if not quite throughout the whole world.

Dear Mr. Root:—You must be rigid, and follow out the instructions accurately, and put your whole soul and body into the work, if you desire to make good progress. Keep the bowels well open, stomach well washed out, and urine clear, and be careful not to overeat. Rest before and after each meal 15 minutes or half an hour if possible, and be careful not to overdo on the bicycle. You will enjoy life as never before if you will simply live rightly.

Yours very truly,

J. H. SALISBURY.

170 W. 59th St., New York, Sept. 27.

P. S.—When bowels do not move by 9 or 9:30 A.M., then take one injection of 1 pint of warm water, with two tablespoonfuls of glycerine in it.

J. H. S.

In addition to the above he makes some comments on my own instructions in our issue for Sept. 1:

Use Enterprise meat grinder No. 10, and put beef through from three to five times, according to quality of beef. Butter is not allowed in bad cases.

IN REGARD TO THE HOT WATER.

Take water at a temperature most comfortable to the individual, *but not cold*.



Several years ago a farmer of my acquaintance showed me a small, insignificant-looking potato. He said he had just got it as a premium for subscribing to the *Rural New-Yorker*, and that it was the "Rural New-Yorker No. 2." A year or two later a good deal was said about this potato; but people generally seemed to be a little slow in recognizing its good qualities, and it was not until three or four years ago that I gave it a trial on our own grounds. You may remember I reported at once that it gave us the only nice good-sized potatoes, free from scab, we had that year, the season being quite unfavorable. Since then it has seemed to be steadily growing in favor. Last fall, in my absence, Ernest bought a load of potatoes, paying, as I thought, a pretty good price for them. He urged that they were worth it on account of the large size and smooth round appearance, and finally had a load of them put in his own cellar. I told him they were a nice-looking potato, but that they were not extra for table use. To my surprise he declared they were the best potatoes they ever got hold of. This, perhaps, may have been later on, toward the spring. Well, the *Rurals* are now one of the standard potatoes in our locality. Farmers who never succeeded in getting any nice potatoes before, have, with the *Rurals*, secured large yields of fine clean potatoes. The son-in-law of the old farmer who first showed me that little potato, years ago, has this season about 800 bushels from four acres of ground. Our good friend Merton G. Chase, who raises such nice crops of honey every year, no matter whether the season is good or bad, secured 75 bushels of the *Rural New-Yorker* potatoes from a quarter of an acre of ground; and they are the handsomest lot of potatoes, for a large potato, I ever saw in my life. Just think of it—300 bushels to the acre! I told him I thought he must be a high-pressure farmer as well as a

high-pressure bee-keeper. I bought all he had to spare, and the Rural New-Yorkers we have for sale include this lot. From the reports in the agricultural papers, I judge this potato has been a great boon to mankind the world over. It would be hard to estimate the good that the *Rural New-Yorker* periodical has done the world in so steadily disseminating this one potato. Perhaps it has not quite done the work that the Concord grape did for years along in the same line. And, by the way, I have just been pained to note the recent death of our friend Bull, who originated and gave to the world the Concord grape. It had been in my mind to do something toward the contribution that the *Rural New-Yorker* has been taking up for him; but I put it off, and now he is gone.

The new Craig potato resembles the Rural perhaps more than any other. The potatoes are still larger—at least, they seem so this season, and I imagine the quality is a little better. The vines, instead of standing upright, however, like the Rural, lie down and run all over the ground. In fact, the general average, when stretched up full length, are now about as high as my head. But the frost last night, Oct. 9, has wound up growth for the season. There has been some objection made to a potato that never ripens up until frost kills it. I hardly think it will hold good in this case, however. Please let us hear from you, friends, when you dig your Craigs. A postal-card report will be sufficient.

The Early Ohio and Lee's Favorite, planted the last day of June, where we picked our strawberries, gave us a good yield of nice potatoes; and the Whittaker onions, mentioned in our last issue, were put in the same afternoon the potatoes were dug; so now we have the third crop growing on the same ground during one season; and the ground was plowed up after each crop was harvested, instead of the interlapping crops by planting between the rows.

A REPORT FROM THE CRAIG POTATOES.

MR. ROOT.—I have dug part, and shall have 160 or 175 bushels of Craig Seedling potatoes. I planted about 2½ bushels. The potatoes were cut to one eye, and planted one piece in a hill, 3-feet check rows, ordinary cultivation, and no manure or fertilizer. There was a little over ½ acre, but many hills did not come up—I think probably because the seed was hastily cut, and extremely dry weather at planting. They were grown on a heavy sandy loam that had grown two crops of Gandy strawberries and one of millet since manuring. I had very few small potatoes; season was very late. C. N. FLANSBURGH, Leslie, Mich., Oct. 10.

Now, 175 bushels, grown from 2½ bushels of seed, will be equivalent to about 70 bushels from one planted. Why, that is even better than my first experiment of last season. I planted one potato, that weighed perhaps one pound, that gave me a bushel—60 lbs. from 1 lb.; but friend F., in the report above, has made a whole field, where he planted 2½ bushels, do as well, and over 300 bushels per acre!

Special Notices.

A GOOD CHEAP PUMP.

We call the special attention of our readers to the Leader pump we offer in another column. There are few people, especially in the country and small towns, who do not use a pump. We believe you will find in this a rare bargain. It may be used for a windmill pump, but the connection for that use costs 75c additional.

CHICAGO BRANCH.

As we go to press we are loading a car of assorted stock for our Chicago branch at 56 Fifth Ave., where our manager, Geo. W. York, will be prepared within a week or ten days to supply all who find it more convenient to trade in Chicago. We will aim to keep there a pretty full stock, especially of the goods most commonly called for. Occasionally or-

ders may have to be forwarded here to be filled if odd-sized goods or something unusual is called for.

SQUARE CANS FROM CHICAGO.

We have made arrangements with a manufacturer of cans in Chicago, to fill orders for one and five gallon square cans so that we are now prepared to ship either from New Orleans, St. Louis, Chicago, Conneaut, Ohio, or from here, at \$6.50 for 10 boxes of two 5-gallon cans with 1½-inch screws; \$15.00 for 25 boxes. Orders for cans from Chicago may be sent here or to our Chicago branch. As the 1½-inch screw seems to be the standard, we have gone back to that size instead of the 1¼ as advertised in our catalog. Special low prices quoted on large lots or carloads.

FACTORY BUSY, AND RUNNING FULL TIME.

What with orders for potato-boxes and other outside work which we have taken in addition to the good demand for supplies from some sections because of a fair crop of fall honey, we have been kept very busy in our wood-working department, and have sometimes been a few days behind on orders for bushel boxes. We are now up on our orders, and are laying up stock preparatory to next season's trade. We shall be glad to hear from those who are in the habit of supplying their needs for the following season in the fall and winter, and any others in search of special prices for buying out of season. Let us have a list of your requirements. The more goods we can place during the fall and winter the better, as it helps distribute the work through the year.

ADVANCE IN PRICE OF GLASS.

There have recently been several sharp advances in the price of window glass. Indeed, present prices are about double what they were last spring. There is a good prospect that these prices will not only be maintained, but will even go higher. We have laid in a good stock of shipping-case glass at very nearly the old price, so we are not obliged yet to mark up our prices to an extent equal to the general advance in the market. Until further notice the price of strips listed in our catalog will be as follows: On all other sizes cut to order, \$3.00 per box of 50 feet.

	Price of
3x17½ for 24-lb. single-tier cases, - - -	30c 100
3x13½ for 3 row cases, - - -	25c 2.40
2x9 for 2 row cases, 12 lb. - - -	10c 8.00

The price of shipping-cases complete with glass will be advanced to correspond with above advances.

HIGHER PRICES ON WIRE NETTING EXPECTED IN THE NEAR FUTURE.

We have no assurance that the exceedingly low prices on wire netting, given on third cover page of this number, will last more than two or three weeks longer. Indeed, in view of the advance in price of iron and steel made during the past few months, the present low prices can not be maintained. The manufacturers will undoubtedly arrange for higher prices the first of next month. In view of the prospect of higher prices we have laid in a stock of 200 rolls in addition to our present stock of over 100 rolls; and until further notice we will accept orders at the prices quoted in our advt on 3-inch No. 18, 2-inch No. 20, and 2-inch No. 19, the three sizes we keep in stock here. Orders for other sizes received during the next two weeks we can doubtless fill at these prices, but we can not guarantee them for a longer time; and even during that time they will be taken subject to acceptance of the manufacturers. We look for an advance of 20 to 25 per cent. It is a good time, therefore, to anticipate your needs and buy at present low prices. We have been doing this in several lines which are advancing; and, to get back the money we have been thus investing, we invite orders at the present low prices. If you anticipate using netting next season it is our judgment that you will make a mistake if you do not buy now while present low prices may be had.

ADVANCE IN WIRE NAILS.

Of the advance in prices during the past few months there have been none so radical as that of wire nails. While nails were selling last April at a base price of 85c a keg for 60d, the bottom now for the same size is \$2.85—an advance in 6 months of \$2.00 a keg, and there is talk of still further ad-